US Army Corps of Engineers
St Paul District

APPLICANT: **Freeborn County Environmental Services, c/o Mr. Richard Hoffman**

Public Notice

ISSUED: November 27, 2013
EXPIRES: December 27, 2013

REFER TO: MVP-2012-00039-SEW

SECTION:404 - Clean Water Act

1. APPLICATION FOR PERMIT TO discharge fill material in State Line Lake, wetlands adjacent to State Line Lake, and the outlet channel of State Line Lake to facilitate the replacement of the State Line Lake dam. Specifically, the applicant is applying for a permit to permanently discharge fill material into approximately 0.21 acre of wet meadow wetlands adjacent to State Line Lake and approximately 0.04 acre of the lake's outlet channel, temporarily disturb 0.29 acre of wet meadow wetland adjacent to State Line Lake, excavate approximately 0.25 acre of State Line Lake, and excavate approximately 0.15 acre of the lake's outlet channel. State Line Lake's outlet channel is a tributary to Lime Creek and the Winnebago River.

2. SPECIFIC INFORMATION.

APPLICANT'S ADDRESS:
P.O. Box 1147
Albert Lea, Minnesota 56007

AGENT:
Jeanine Vorland
Minnesota Dept. of Natural Resources
Division of Fish & Wildlife

AGENT'S ADDRESS:
Area Wildlife Office
8485 Rose Street
Owatonna, Minnesota 55060

PROJECT LOCATION: The project site is located in Sec. 33, T. 101N., R. 22W., Freeborn County, Minnesota. The approximate coordinates are -93.478016W., and 43.503381N.

DESCRIPTION OF PROJECT: Freeborn County, the Minnesota Department of Natural Resources (MnDNR), and Ducks Unlimited (DU) propose to remove and replace the existing fixed crest concrete wall dam on State Line Lake. The 60-foot long dam was originally built in 1930. It consists of a 20-foot weir section that is about 1 foot lower than its wingwalls, and has with a centerline elevation of 1269.7 NAVD88. The dam was repaired with sheet piling and concrete in the 1970s. Currently, the dam is cracked and has a wash-out in the south abutment dike, allowing water to leak under and around the structure. The dam's sheet piling and apron are also failing. Replacing the dam will prevent the lake from draining out in the event of dam failure, and will also allow for future opportunities to manage lake habitat and water quality.

The proposed replacement variable crest dam structure would be located approximately 23 feet downstream of the existing structure, and would consist of a sheet pile-stop log structure with a 20-foot long weir and an overflow elevation of 1269.60 NAVD88. The outlet weir would have two five-foot stop log bays for water level management, including drawdown capability to a level of 1265.00 NAVD88. The total length of the sheetpile weir would be 73.6 feet; from the 20-foot long overflow

section, it would increase in elevation on either side at a 3:1 slope to elevation 1271.50 feet. The sheetpile would be installed in constructed earthen abutments built to a top elevation of 1273.00 feet. The earthen abutments would total approximately 285 feet in length, with a top width of 10 feet and 3:1 sideslopes, and would be tied into the existing ground elevation on either side of the dam. Beneath the area of the proposed embankment, approximately 12 inches of topsoil would be excavated and temporarily stockpiled in adjacent uplands. About four inches of topsoil would be placed on the top and sideslopes of the constructed abutments, and the embankment would be seeded. The approximately 452 cubic yards of material needed for the embankments would be obtained from adjacent upland areas. An approximately 540-foot long inlet channel would be constructed upstream of the new outlet structure to facilitate future lake draw-down events for aquatic habitat and water quality management purposes. The inlet channel would have a 10-foot bottom width, 2:1 sideslopes, and a bottom elevation of 1265.00 feet. The inlet channel construction would require excavating between 0-3 feet of material (approximately 450 cubic yards) from the lake. The excavated material would be used to reclaim the upland borrow areas on site; the borrow areas would be stabilized and seeded upon completion of the project. Approximately 15 linear feet of riprap would be placed on the inlet channel sideslopes immediately upstream of the dam. Additionally, an approximately 166-foot long, rock-lined outlet channel with a 20-foot bottom width, 2:1 sideslopes, and a bottom elevation of 1265.00 feet would be constructed in the location of the existing outlet channel to provide a stable outlet for the new dam. Approximately 245 cubic yards of material from the existing outlet ditch would be excavated to construct the new outlet channel. The proposed outlet channel bottom elevation closely approximates that of the existing outlet ditch, and averages only about 0.2 feet lower than the existing channel. The new outlet channel would tie into the existing ditch bottom width of 15 feet at the end of the proposed excavation. Approximately 25 linear feet of riprap would be placed along the uppermost section of the outlet channel's bed and banks. About six inches of topsoil excavated from the channel sideslopes would be re-used on the portion of the channel not receiving riprap; the remainder of the excavated material would be used in the embankments or spread in adjacent upland areas.

Finally, to facilitate the construction of the dam replacement project and improve aquatic habitat in the lake, approximately 200 acres of the 446-acre State Line Lake would be temporarily dewatered. Water levels in the lake would be lowered approximately 3 feet. The draw-down would begin prior to the removal and construction of the new dam, and the lake would remain in its drawn-down condition through the construction period, which is anticipated to last until summer 2014. The lake would be drawn-down a maximum 3.5 feet in the winter, and a maximum of 2.5 feet in the summer, exposing some areas of the lake and leaving approximately one-to-two feet of water in other areas of the lake, as shown on the attached Figure 3. MnDNR may continue the draw-down past the completed project construction date for habitat management purposes, as needed and in accordance with the MnDNR's existing management plan for State Line Lake. The maximum period of draw-down allowed by MnDNR's management plan is two years, though the MnDNR stated it is unlikely the draw-down for habitat management purposes would be needed past spring 2015.

QUANTITY, TYPE, AND AREA OF FILL: Approximately 785 cubic yards of material would be used to construct the earthen embankments. The earthen embankments would permanently fill approximately 9,000 square feet of wet meadow wetlands adjacent to State Line Lake. Approximately 186 tons of riprap would be placed in the reconstructed outlet ditch, including 15 linear feet (700 square feet) on the banks upstream of the proposed outlet structure, and 25 linear feet (1,000 square feet) on the banks and bed downstream of the proposed outlet structure.

VEGETATION IN AFFECTED AREA: Vegetation in the project area includes an approximately 1.3-acre wet meadow wetland dominated by reed canary grass and Canada golden rod. The wet meadow wetland is located at the outlet of State Line Lake and along the outlet ditch. Approximately 0.5 acre of this wetland would be temporarily disturbed by clearing, construction access, and equipment staging. Approximately 9,000 square feet of wet meadow wetlands within the 0.5-acre area would be affected by fill for the dam embankments. The remainder of the wetlands within the 0.5-acre construction area would be returned to preconstruction contours and elevations, and seeded with native wetland species. In the project area, the open water areas of State Line Lake are surrounded by a deep marsh and shallow marsh fringe. Approximately 300 square feet of wetlands located at the existing dam would be affected by inundation due to the slight relocation of the dam about 23 feet downstream of its existing location. The lake itself consists of shallow open water, and is roughly 6-7 feet deep in its deepest areas at the MnDNR ordinary high water level of 1270.0 feet NGVD 29. The land outside the wet meadow areas includes planted upland areas dominated by big bluestem, with lesser amounts of little bluestem and indiangrass. This area has been affected by tile drainage and the outlet ditch, and contains some areas of drained wetland. Vegetation immediately adjacent to the outlet ditch consists of reed canary grass, box elder, and willow species.

SOURCE OF FILL MATERIAL: Riprap would be obtained from a commercial quarry. The clay fill for the earthen embankments would be obtained from 1-2 upland borrow areas located on the east side of the outlet ditch. Topsoil for the earthen embankments would be obtained from the wetland and upland areas within the embankment footprint. Additional fill for the embankments may be obtained from the excavation of the outlet channel. The proposed borrow sites were carefully selected to avoid impacts to known archaeological sites and wetlands. Material excavated from the construction of the inlet channel and dam removal would be used to reclaim borrow areas.

SURROUNDING LAND USE: The land use on the south and north sides of the project area includes upland and drained wetland areas, along with restored wet meadow and shallow marsh wetlands on the north side of County Highway 76. The upland areas on the south side consist of former cropland planted to perennial grasses under the Conservation Reserve Program, while the land on the north side of the project is cropped. A residential area of the City of Emmons lies to the west of the project site, while agricultural and rural areas in Iowa exist south of County Highway 76.

DESCRIPTION OF STRUCTURE: See above “Description of Project” for details on the proposed outlet replacement structure.

DESCRIPTION OF DREDGING OR EXCAVATION: Approximately 450 cubic yards of material would be excavated from an approximately 11,000 square-foot (0.25 acre) area of State Line Lake for the construction of the inlet channel and the removal of the existing dam. The inlet channel dimensions are discussed above under “Description of Project”. Approximately 700 square feet (15 linear feet) of the existing outlet ditch would be impacted to construct the new inlet ditch. Additionally, approximately 245 cubic yards of material would be excavated from an approximately 6,000 square-foot area of the existing outlet ditch to construct a stabilized outlet channel for the new dam, affecting approximately 166 linear feet of the outlet ditch. The proposed outlet channel is detailed above under “Description of Project”.

THE FOLLOWING POTENTIALLY TOXIC MATERIALS COULD BE USED AT THE PROJECT SITE: Potentially toxic materials that could be used at the site include fuels, lubricants, and solvents. Specific types of products, quantities, and specific applications of these materials were not provided with the application.

THE FOLLOWING PRECAUTIONS TO PROTECT WATER QUALITY HAVE BEEN DESCRIBED BY THE APPLICANT: The applicant has prepared a Stormwater Pollution Prevention Plan (SWPPP), and will obtain a stormwater permit as required by the Minnesota Pollution Control Agency. The applicant will utilize silt fence upstream of the new dam to protect State Line Lake, and will place silt fence around the two chosen upland borrow/spoil sites. Other planned stormwater best management practices (BMPs) include biorolls and a temporary rock check on the downstream side of the project area in the outlet ditch. Erosion control BMPs would be installed concurrently or within 24 hours of beginning work, and would be maintained until project completion. All disturbed areas would be seeded and mulched with a local eco-type seed mixture selected by the MnDNR, including the constructed embankments and the borrow/spoil disposal locations. To reduce long-term erosion potential, permanent riprap would be placed at the dam outlet as described above.

MITIGATION: The applicant did not propose compensatory mitigation for the proposed permanent wetland impacts associated with wetland fill for the dam embankments. Approximately 1,200 square feet would be added to State Line Lake due to the relocation of the dam approximately 23 feet downstream from its current location; this would affect 300 square feet of wet meadow wetlands. The purpose of the project is to replace a failing dam so normal water levels in State Line Lake can be maintained, and also to add the ability to manipulate water levels to improve water quality, aquatic habitat, and recreation. The existing dam has created stable, high water levels that have led to poor coverage of aquatic plants; the lake also has high nutrient levels and poor transparency, which is indicative of problems with eutrophication and turbidity. By installing an outlet structure that would allow for periodic draw-downs to mimic natural droughts, the MnDNR will be able to improve aquatic plant cover and manage rough fish populations in State Line Lake, benefiting native fish and wildlife. MnDNR and Ducks Unlimited also proposes to restore two acres of drained depressional wetlands and five acres of non-depressional wetlands adjacent to the lake by breaking and capping tile lines, and seeding areas with native prairie and wetland species. The applicant does not propose to use this restoration work as compensatory mitigation for this project.

The need for compensatory mitigation will be evaluated by the Corps during the permit review process.

3. REPLIES/COMMENTS.

Interested parties are invited to submit to this office written facts, arguments, or objections within 30 days of the date of this notice. These statements should bear upon the suitability of the location and the adequacy of the project and should, if appropriate, suggest any changes believed to be desirable. Comments received may be forwarded to the applicant.

Replies may be addressed to Regulatory Branch, St. Paul District, Corps of Engineers, 180 Fifth Street East, Suite 700, Saint Paul, MN 55101-1678.

Or, IF YOU HAVE QUESTIONS ABOUT THE PROJECT, call Sarah Wingert at the St. Paul office of the Corps, telephone number (651) 290 - 5358.

To receive Public Notices by e-mail, go to: http://mvp-extstp.mvp.usace.army.mil/list_server/ and add your information in the New Registration Box.

4. FEDERALLY-LISTED THREATENED OR ENDANGERED WILDLIFE OR PLANTS OR THEIR CRITICAL HABITAT.

None were identified by the applicant or are known to exist in the permit area. There are no known Federally-listed threatened (T) and endangered (E) species in Freeborn County.

This application is being coordinated with the U.S. Fish and Wildlife Service. Any comments it may have concerning Federally-listed threatened or endangered wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

5. JURISDICTION.

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction under Sections 9 & 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act identified in Regulatory Guidance Letter 08-02. We have made an initial determination that the aquatic resources that would be impacted by the proposed project are regulated by the Corps of Engineers under Section 404 of the Clean Water Act and/or Section(s) 9 & 10 of the Rivers and Harbors Act. The Corps will prepare an approved or preliminary jurisdictional determination prior to making a permit decision. Approved jurisdictional determinations are posted on the St. Paul District web page at http://www.mvp.usace.army.mil/Missions/Regulatory.aspx.

THE APPLICANT HAS STATED THAT THE FOLLOWING STATE, COUNTY, AND/OR LOCAL PERMITS HAVE BEEN APPLIED FOR/ISSUED:

1) MnDNR public waters permit for dam replacement and associated dewatering of State Line Lake: permit 2013-1498 issued on July 25, 2013.
2) Minnesota Wetland Conservation Act (WCA): “no loss” exemption pending.

6. STATE SECTION 401 WATER QUALITY CERTIFICATION.

Valid Section 404 permits cannot be issued for any activity unless state water quality certification for the activity is granted or waived pursuant to Section 401 of the Clean Water Act. The state Section 401 authority in Minnesota is the Minnesota Pollution Control Agency (MPCA). The St. Paul District has provided this public notice and a copy of the applicant’s Section 404 permit application form to the MPCA. If MPCA needs any additional information in order for the Section 401 application to be considered complete by MPCA, the MPCA has indicated that it will request such information from the applicant. It is the permit applicant’s responsibility to ensure that the MPCA has received a valid, complete application for state Section 401 certification and to obtain a final Section 401 action from the MPCA.

The MPCA has indicated that this public notice serves as its public notice of the application for Section 401 water quality certification under Minnesota Rules Part 7001. The MPCA has also indicated that the Section 401 process shall begin to commence upon the issuance date of this public notice unless the MPCA notifies both the St. Paul District and the permit applicant to the contrary, in writing, before the expiration date of this public notice.

Any comments relative to MPCA's Section 401 Certification for the activity proposed in this public notice may be sent to:

Minnesota Pollution Control Agency, Resource Management and Assistance Division, Attention: 401 Certification, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

7. HISTORICAL/ARCHAEOLOGICAL.

This public notice is being sent to the National Park Service and the State Archaeologist for their comments. The Corps has reviewed information on known cultural resources and/or historic properties within and adjacent to the project area, including a cultural resources reconnaissance survey completed by the MnDNR for this project. The results of this review and the Corps' determination of no historic properties affected have been coordinated with the State Historic Preservation Officer independent of this public notice on October 10, 2013. The Corps will also consider the potential effects of the project on any properties that have yet to be identified. Any adverse effects on historic properties will be resolved prior to the Corps authorization, or approval, of the work in connection with this project.

8. PUBLIC HEARING REQUESTS.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, in detail, the reasons for holding a public hearing. A request may be denied if substantive reasons for holding a hearing are not provided or if there is otherwise no valid interest to be served.

9. PUBLIC INTEREST REVIEW.

The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. Environmental and other documents will be available for review in the St. Paul District Office.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision,

comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Chad Konickson
Chief, Southwest Section

Enclosures

NOTICE TO EDITORS: This public notice is provided as background information and is not a request or contract for publication.

2012-00039-SEW, Table 1 of 1: Proposed Impacts

State Line Lake (Shallow Open Water Wetland)		
Source of Impact	**Permanent Impact Area**	**Temporary Impact Area**
Excavation	11,000 square feet (inlet channel excavation and dam removal)	0
Dewatering	0	200 acres
TOTAL IMPACT AREA	11,000 square feet (0.253 acre)	200 acres
Area Added to Lake through Impoundment	1,200 squre feet	0

Partially-Drained Wet Meadow Wetland Adjacent to State Line Lake		
Source of Impact	**Permanent Impact Area**	**Temporary Impact Area**
Fill/excavation	construction)	0
Construction Staging*	0	0.5 acre
Impoundment	300 square feet	0
TOTAL IMPACT AREA	9,000 square feet (0.207 acre)	0.5 acre
Restored Wetland Areas	7 acres	0

*The wetland area affected by construction staging includes the proposed fill area.

Outlet Ditch (Upstream of New Dam)		
Source of Impact	**Permanent Impact Area**	**Temporary Impact Area**
Fill	700 square feet (0.016 acre) of riprap along sideslopes; 15 linear feet affected	0
Excavcation	700 square feet of inlet channel excavation; 15 linear feet affected	0
Conversion	700 square feet of impoundment; converted to lake/shallow open water wetland; 15 linear feet affected	0
Outlet Ditch (Downstream of New Dam)		
Source of Impact	**Permanent Impact Area**	**Temporary Impact Area**
Fill	1,000 square feet of riprap, 25 linear feet affected immediately downstream of dam	0
Excavation	6,000 square feet of channel excavation, 166 linear feet affected	0
TOTAL IMPACT AREA*	6,700 square feet (0.154 acre); 181 linear feet	0

*downstream of the new dam, the 1,000 sf of riprap would occur within the 6,000 sf area affected by excavation; upstream of the new dam, the fill/excavation/and conversion impacts would occur in the same 700 square-foot area.

2012-00039-SEW, Figure 1 of 13: Aquatic Resources in the Project Area

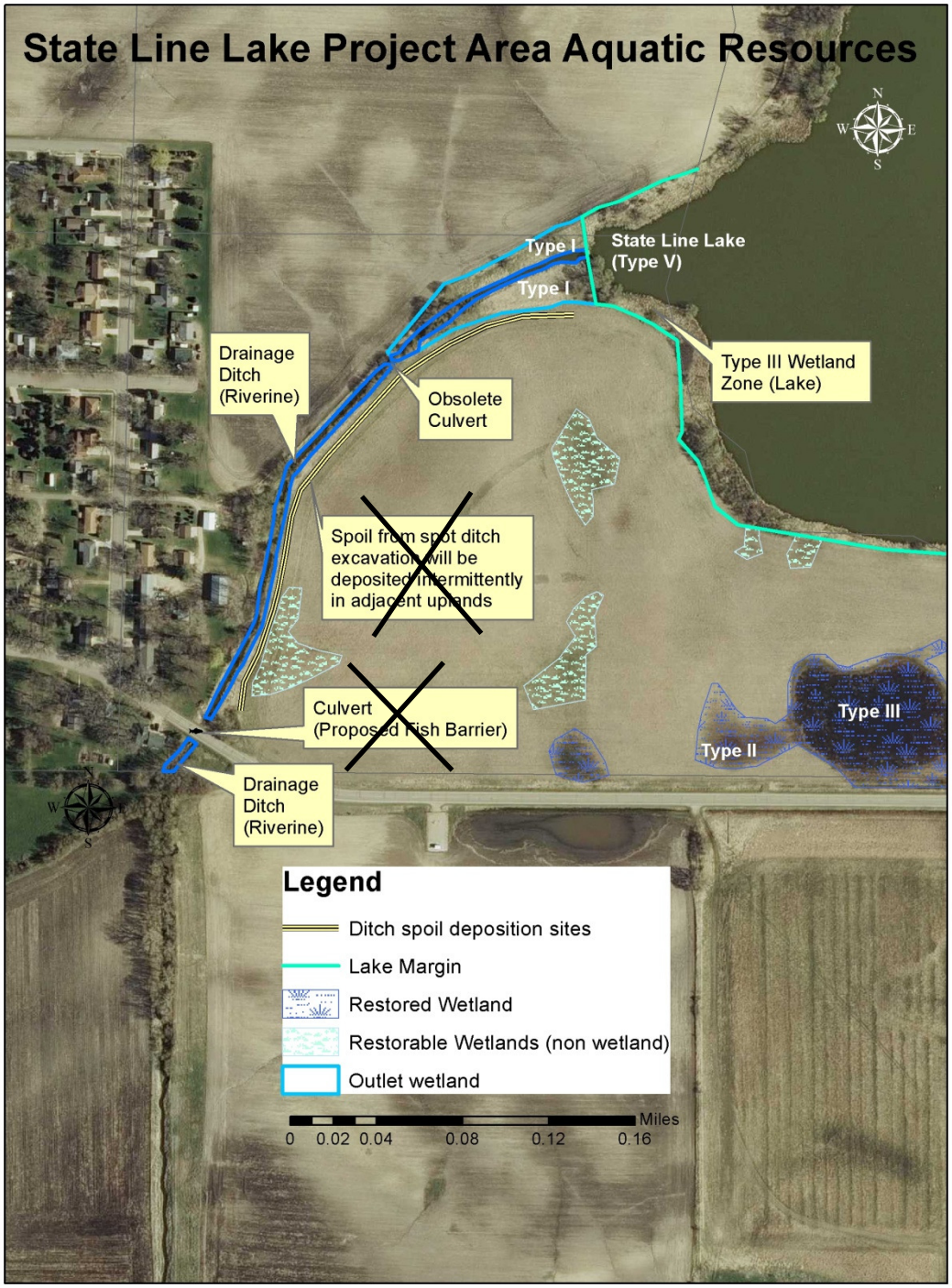
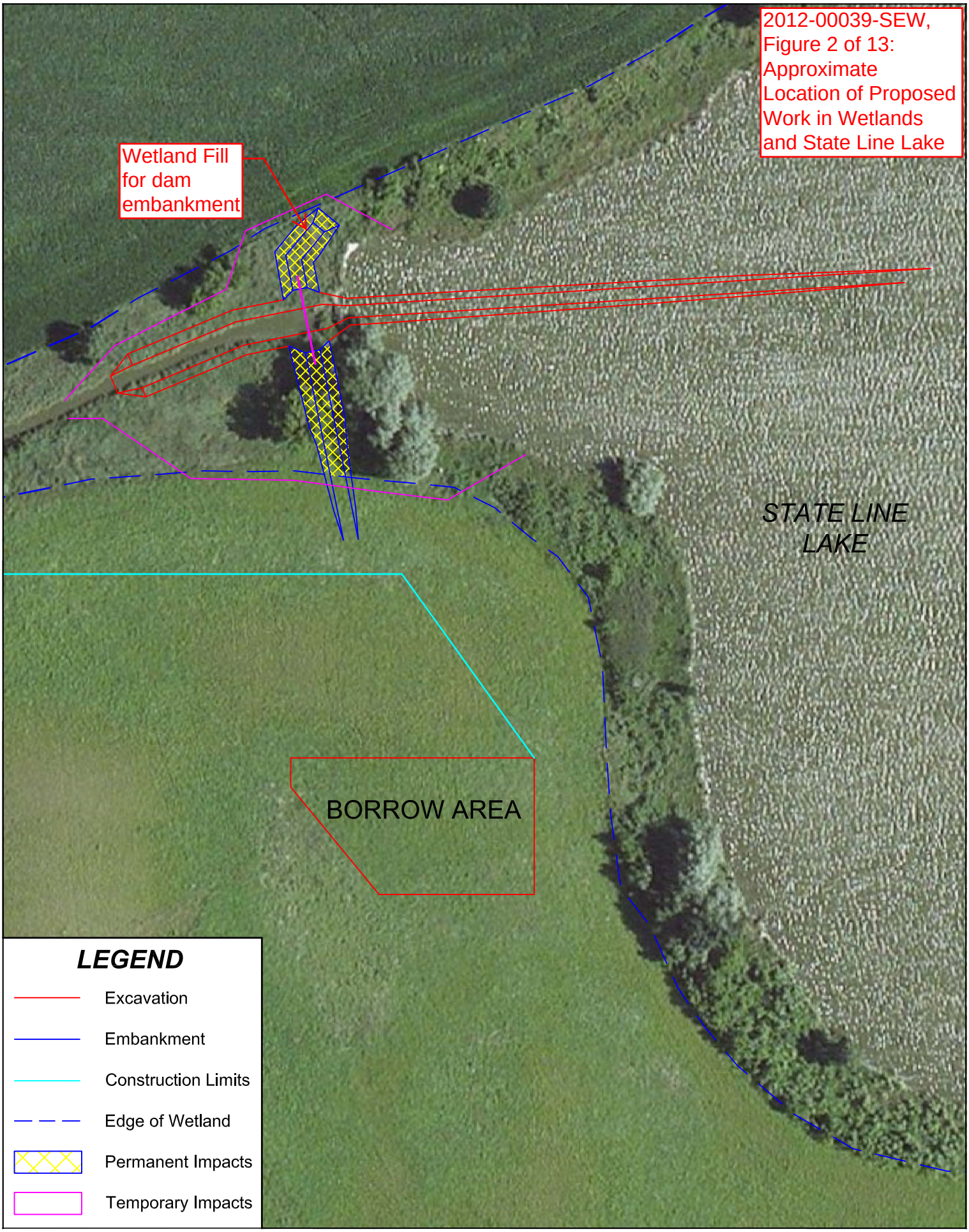


Figure 2. Map of aquatic resources .


2012-00039-SEW, Figure 2 of 13: Approximate Location of Proposed Work in Wetlands and State Line Lake
Wetland Fill for dam embankment
STATE LINE LAKE
BORROW AREA
LEGEND
Excavation
Embankment
Construction Limits
Edge of Wetland
Permanent Impacts
Temporary Impacts

2012-00039-SEW, Figure 3 of 13: Water Depth in State Line Lake During Proposed Drawdown

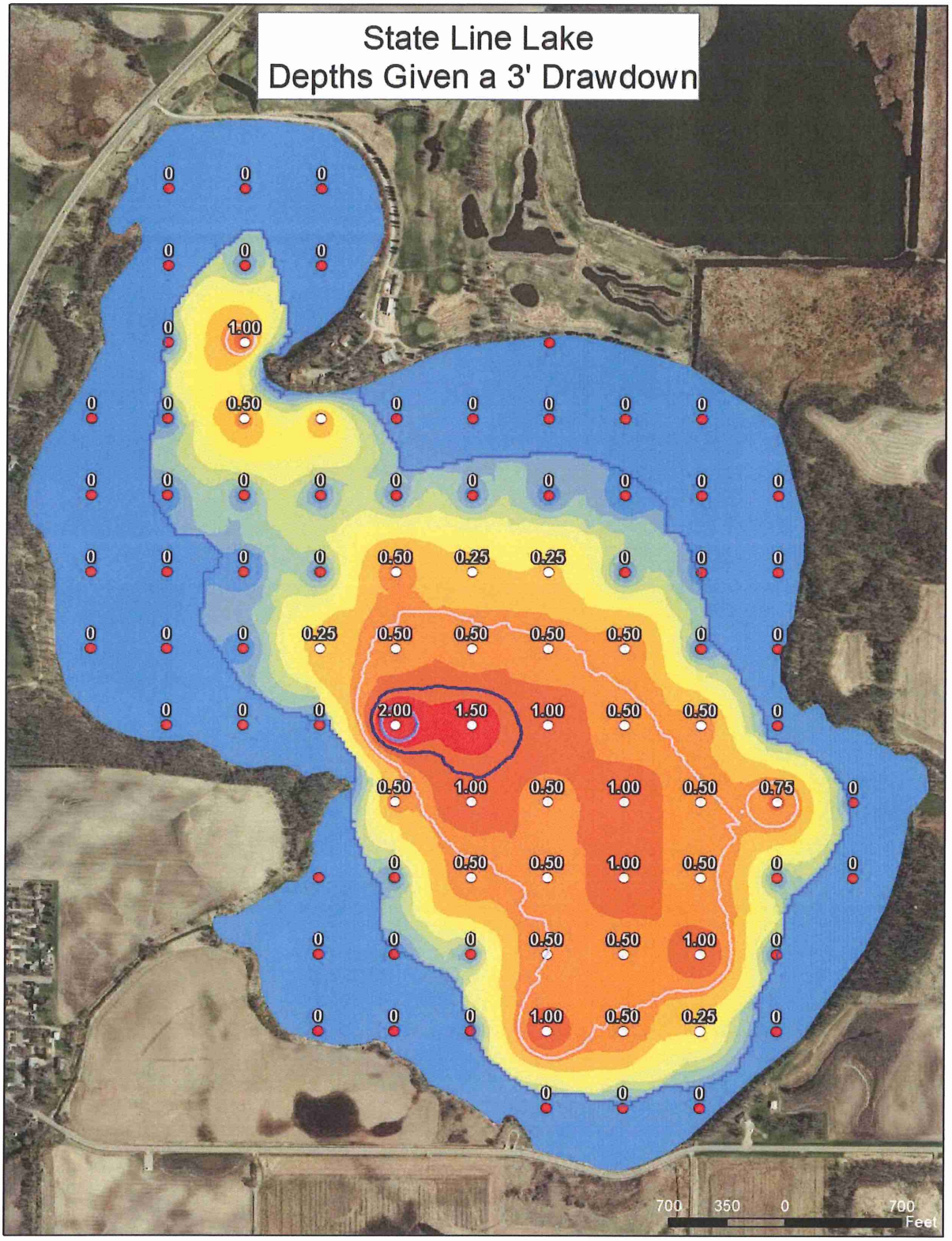


Figure 3. Anticipated water depths for State Line Lake during managed drawdown for outlet rehabilitation and restoration of aquatic habitats.

2012-00039-SEW, Figure 4 of 13: Project Plans for Dam Removal/Replacement

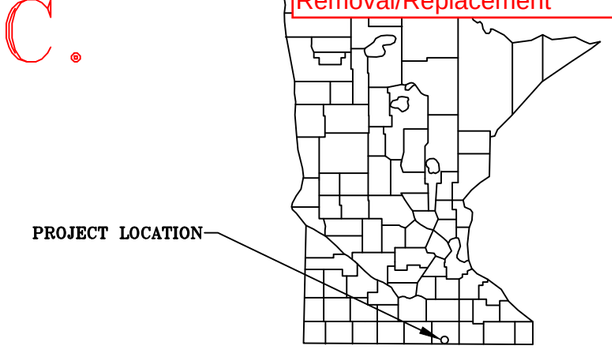
DUCKS UNLIMITED, INC.

DUCKS UNLIMITED

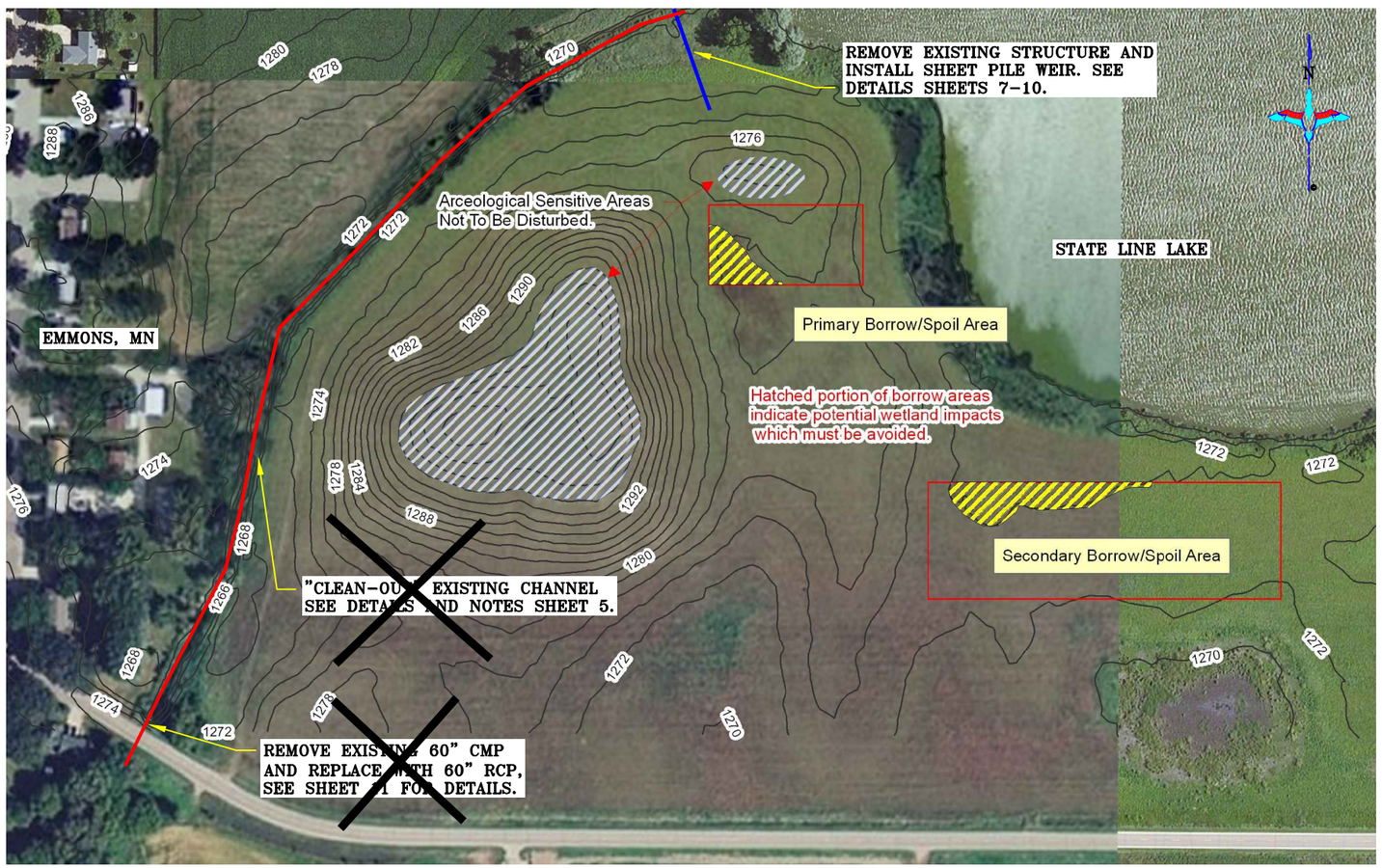
STATE LINE LAKE

SECTION 4 TOWNSHIP 111N, RANGE 46W
FREEBORN COUNTY, MN

IN COOPERATION WITH
MINNESOTA DEPARTMENT OF NATURAL RESOURCES

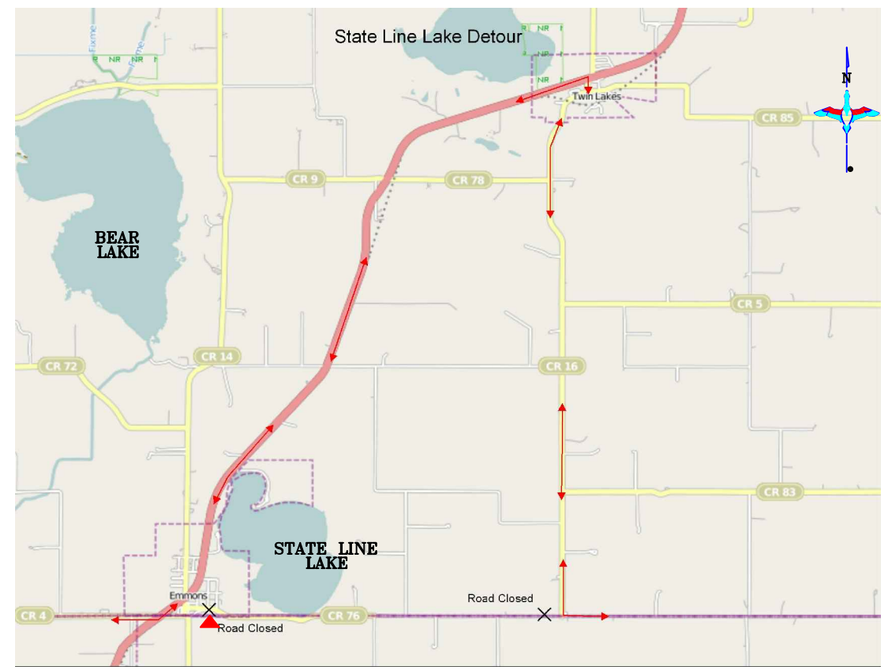


MINNESOTA



LOCATION MAP
NOT TO SCALE

MAP POINT "▲" IS LOCATED @ INTERSECTION OF HWY 69 AND COUNTY HWY 76 "STATE LINE ROAD" LOCATED IN EMMONS, MN TO SITE FROM MAP POINT: HEAD EAST ON COUNTY HWY 76 "STATE LINE ROAD" ±1 MILE TO EXISTING OUTLET CHANNEL FROM STATE LINE LAKE, ACCESS WILL BE THROUGH APPROACH LOCATED TO THE EAST OF OUTLET CHANNEL.



VICINITY MAP/DETOUR
NOT TO SCALE

PLAN INDEX

1	PROJECT LOCATION MAPS
2	ESTIMATED QUANTITIES AND CONSTRUCTION NOTES
3	PROJECT TOPOGRAPHY
4	PLAN & PROFILE STRUCTURE SITE, CHANNEL DETAILS
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6	PLAN & PROFILE EMBANKMENT, DETAILS AND NOTES
7–10	SHEET PILE WATER CONTROL STR. DETAILS AND NOTES
11	CULVERT REPLACEMENT PLAN & PROFILE
12	STORMWATER BEST MANAGEMENT PRACTICES
13	STORMWATER POLLUTION PREVENTION PLAN

PROJECT CONTACTS:
JEANINE VORLAND
AREA MANAGER DNR, RICE LAKE STATE PARK
(507) 455-5841

JIM STREIFEL, P.E.
DU – BISMARCK, ND
701-355-3551

IF THESE PLANS ARE NOT PLOTTED AND/OR REPRODUCED AT THE ORIGINAL SIZE OF 24"x 36" ANY SCALE REFERENCED HEREIN SHOULD BE DISREGARDED AND THE PLANS SHOULD BE CONSIDERED "NOT TO SCALE."

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

James A. Streifel — 8-12-2013
James A. Streifel, P.E. for Ducks Unlimited, Inc. — Date
License No. 47359

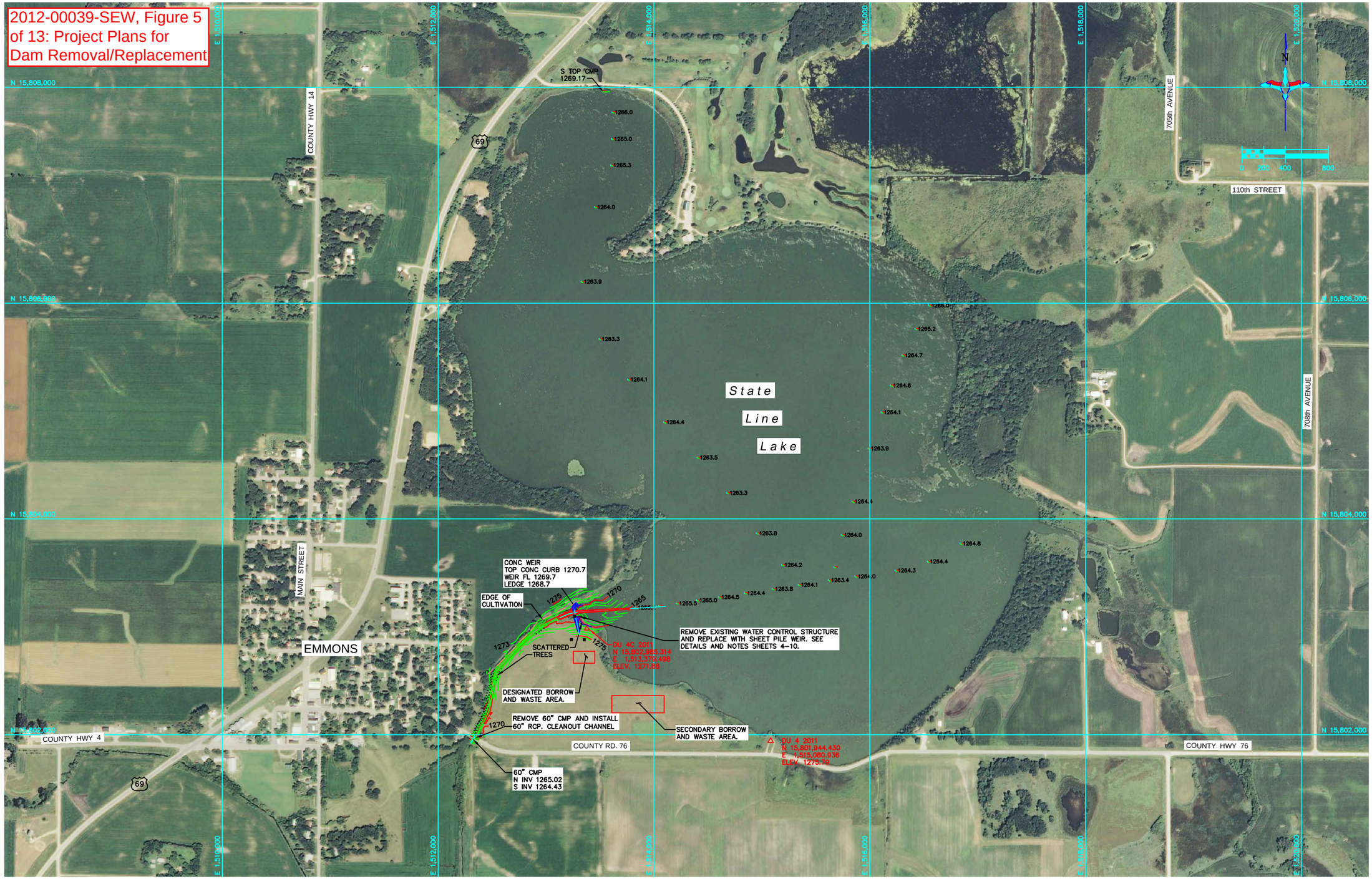
DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

PROJECT NO. MN-428-2
STATE LINE LAKE
COVER SHEET

DESIGNED BY: JAS
DRAWN BY: MLO
SURVEYED BY: GLJ
CHECKED BY: .

DATE: 7-30-2013 | SHEET NO. 1 OF 13 | APPROVED BY: . | APPROVED BY: .

2012-00039-SEW, Figure 5 of 13: Project Plans for Dam Removal/Replacement



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HORIZONTAL CONTROL - coordinates are true UTM Zone 15 grid coordinates in US feet [NAD 83 (1996)]. They were established from the WGS84 Ellipsoid with information from Trimble 5700 survey grade GPS receivers on February 24, 2011 and calibrated to an OPUS position occupied for 4 hours and 21 minutes and sent to NGS for solution. The full OPUS report is on file at the GPRO Surveying Department in Bismarck, North Dakota.

VERTICAL CONTROL - was established from the Geoid 09 CONUS and calibrated to MNDT bench mark stamped "2406 S 1991" which is a Second Order Class I bench mark with a published elevation of 1275.94 feet on the NAVD88. The NGVD29 is computed to be 0.118 feet lower than the NAVD88 for this location.

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8–12–2013
Date

DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

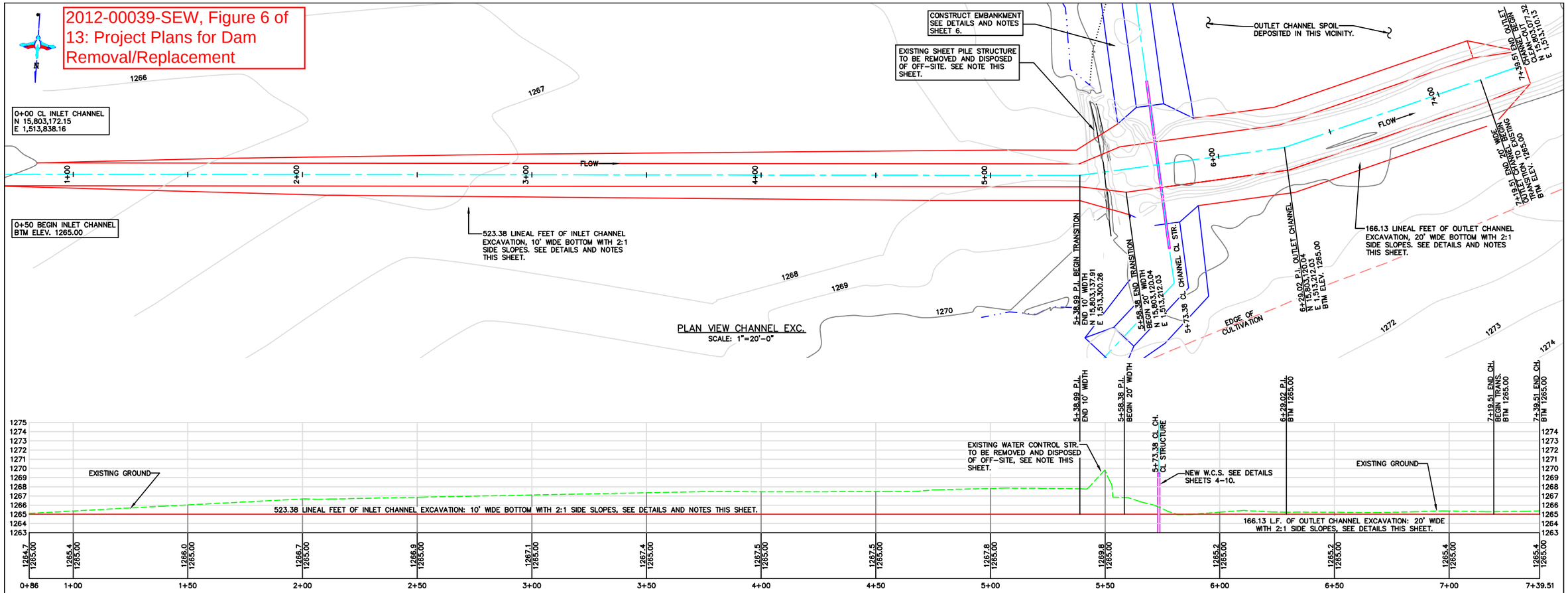
PROJECT NO. MN428–2

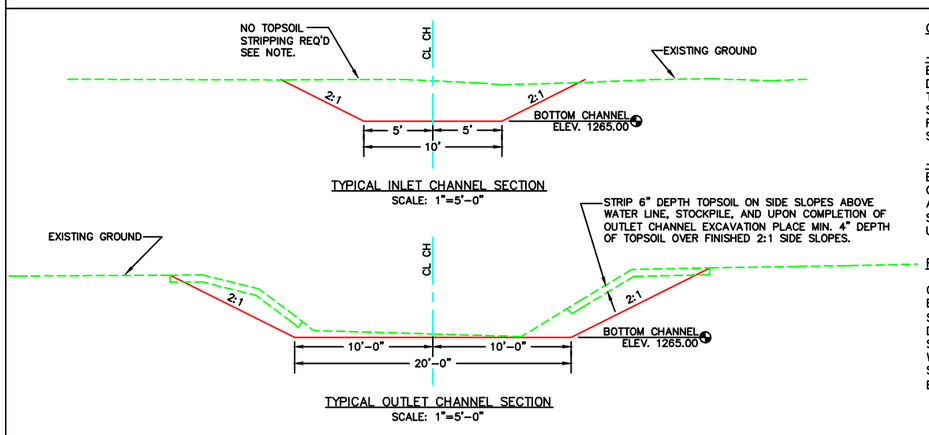
STATE LINE LAKE
PROJECT TOPOGRAPHY

DESIGNED BY: JAS
DRAWN BY: DAK
SURVEYED BY: GLJ
CHECKED BY: .

DATE: 7–30–2013
SHEET NO. 3 OF 13
APPROVED BY: .
APPROVED BY: .

2012-00039-SEW, Figure 6 of 13: Project Plans for Dam Removal/Replacement





CHANNEL EXCAVATION NOTES:

-INLET CHANNEL STATIONS 0+50-5+73.38: CONTRACTOR SHALL EXCAVATE 10' WIDE 2:1 SLOPE CHANNEL @ BOTTOM ELEV. 1265.00, ALL SPOIL MATERIAL SHALL BE REMOVED FROM WETLAND AND DEPOSITED IN DESIGNATED WASTE AREA. DESIGNATED WASTE AREA IS ALSO BORROW AREA FOR EMBANKMENT FILL, CONTRACTOR SHALL 1ST MINE MATERIAL PRIOR TO FILLING HOLE WITH SPOIL MATERIAL, EXCESS SPOIL WILL BE BLENDED INTO THE EXISTING LANDSCAPE AND LEVELED SUITABLE ENOUGH FOR SEEDING AND MULCHING AS DETERMINED BY DU FIELD ENGINEER. NO TOPSOIL STRIPPING IS REQUIRED. CONTRACTOR SHALL INCLUDE A SECOND MOBILIZATION TO RETURN WHEN WATER LEVELS HAVE LOWERED SUITABLE ENOUGH TO FINISH FULL INLET CHANNEL AS SHOWN.

-OUTLET CHANNEL STATIONS 5+73.38-7+39.51: CONTRACTOR SHALL EXCAVATE 20' WIDE 2:1 SLOPE CHANNEL @ BOTTOM ELEV. 1265.00 AND TRANSITION TO EXISTING CHANNEL WIDTH @ END. SPOIL MATERIAL SHALL BE SIDE-CASTED ON THE SOUTH SIDE OF THE CHANNEL AND BE BLENDING INTO THE EXISTING LANDSCAPE TO THE EXTENT POSSIBLE AND LEVELED SUITABLE ENOUGH FOR SEEDING & MULCHING AS DETERMINED BY DU FIELD ENGINEER. CONTRACTOR SHALL STRIP 6" DEPTH OF TOPSOIL ON UPLAND GRASS FROM NEW STRUCTURE TO ENDING STATION. TOPSOIL SHALL BE USED TO COVER ANY CHANNEL SLOPES NOT RECEIVING ROCK RIPRAP.

REMOVAL OF EXISTING STRUCTURE NOTE:

CONTRACTOR SHALL REMOVE THE EXISTING SHEET PILE WEIR AND ASSOCIATED HARDWARE, SUCH MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR FOR PROPER DISPOSAL OFF-SITE. THIS SHALL INCLUDE BUT NOT LIMITED TO SHEETING, CONCRETE, TREES/BRUSH LOCATED AROUND THE EXISTING STRUCTURE, AND ANY OTHER ITEMS AS DETERMINED BY THE DU FIELD ENGINEER PERTAINING TO THE EXISTING WATER CONTROL STRUCTURE. ANY ROCK RIPRAP SHALL BE SALVAGED AND USED ON DOWNSTREAM SLOPES AS DETERMINED BY DU FIELD ENGINEER. SALVAGED ROCK WILL BE INSTALLED UNDER THIS LINE ITEM AND SHALL NOT REPLACE ROCK REQUIRED FOR NEW WATER CONTROL STRUCTURE. PAYMENT FOR REMOVAL EXISTING SHEET PILE STRUCTURE AND ASSOCIATED HARDWARE SHALL BE PAID FOR BASED ON THE CONTRACTORS UNIT BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE."

ESTIMATED QUANTITIES:

INLET CHANNEL STATIONS 0+50-5+73.38:	450 C.Y.
OUTLET CHANNEL STATIONS 5+73.38-7+39.51:	245 C.Y.
TOTAL:	700 C.Y.

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

James A. Streifel 8-12-2013
James A. Streifel, P.E. for Ducks Unlimited, Inc. License No. 47359 — Date

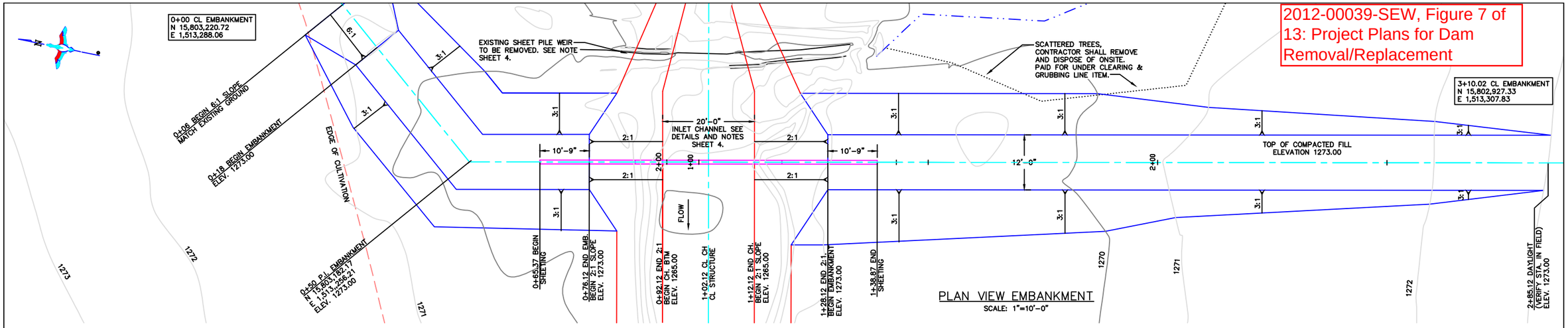
DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

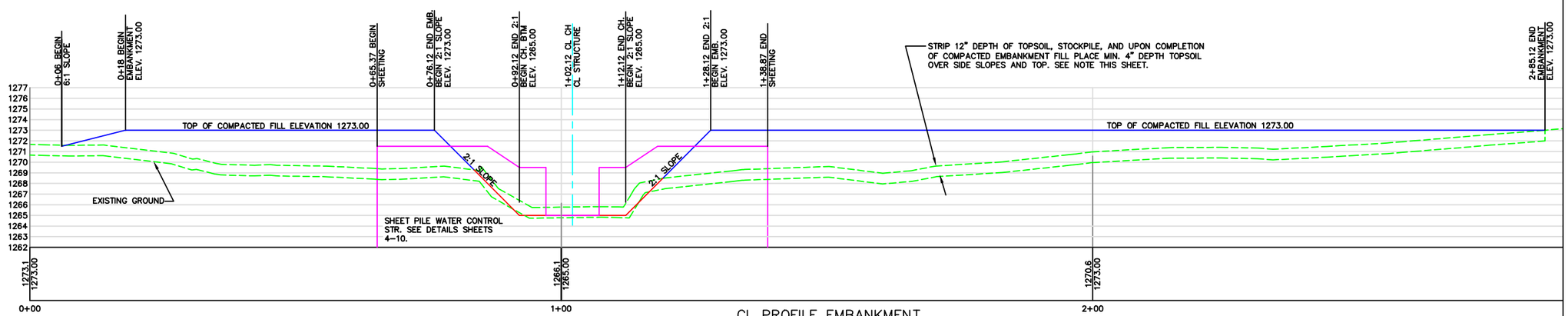
PROJECT NO. MN-428-2
STATE LINE LAKE
PLAN & PROFILE STR. SITE
CHANNEL DETAILS AND NOTES

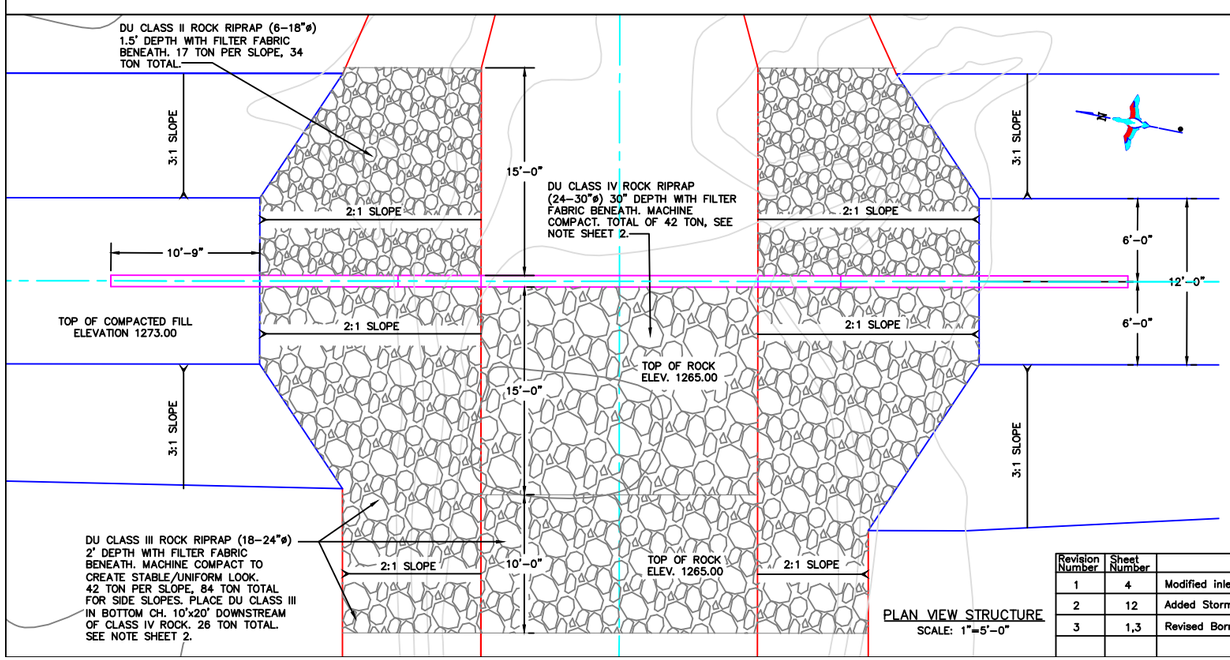
DESIGNED BY: JAS
DRAWN BY: MLO
SURVEYED BY: GLJ
CHECKED BY: .

DATE: 7-30-2013 | SHEET NO. 4 OF 13 | APPROVED BY: . | APPROVED BY: .

2012-00039-SEW, Figure 7 of 13: Project Plans for Dam Removal/Replacement







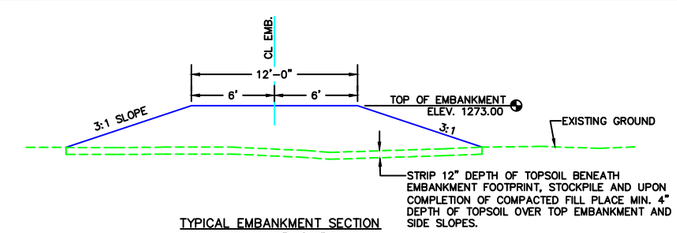
ESTIMATED QUANTITIES:

DU CLASS II ROCK RIPRAP (12-18"ø)	34 TON
DU CLASS III ROCK RIPRAP (18-24"ø)	110 TON
DU CLASS IV ROCK RIPRAP (24-30"ø)	42 TON

ESTIMATED QUANTITIES:

EMBANKMENT:

SITE PREPARATION (12" DEPTH)	230 C.Y.-P
COMPACTED EMBANKMENT FILL	452 C.Y.-P
TOTAL (INCLUDES 15% FOR SHRINKAGE)	785 C.Y.-P



SITE PREPARATION NOTE ON EMBANKMENT:

12" DEPTH TOPSOIL SHALL BE STRIPPED FROM BENEATH THE EMBANKMENT FOOTPRINT AND STOCKPILED PRIOR TO PLACING FILL. UPON COMPLETION OF COMPACTED EMBANKMENT FILL, CONTRACTOR SHALL PLACE MIN. 4" DEPTH TOPSOIL OVER UPSTREAM/DOWNSTREAM SLOPES AND TOP OF EMBANKMENTS. ANY ADDITIONAL TOPSOIL SHALL BE PLACED ALONG DOWNSTREAM SLOPES TO FLATTEN AND THICKEN SUCH. THE CONTRACTOR SHALL LEVEL ALL TOPSOIL SUITABLE ENOUGH FOR SEEDING & MULCHING, AS DETERMINED BY DU FIELD ENGINEER. PAYMENT FOR STRIPPING, STOCKPILING, REMOVAL/DEPOSITING, AND PLACEMENT SHALL BE PAID FOR BASED ON THE CONTRACTOR'S UNIT BID PRICE FOR "SITE PREPARATION."

EMBANKMENT/BORROW AREA NOTE:

COHESIVE EMBANKMENT MATERIAL 785 C.Y.-P (INCLUDES 15% FOR SHRINKAGE AND 230 C.Y.-P SITE PREPARATION) SHALL COME FROM ONSITE BORROW AREA SHOWN SHEET 1. THE DU FIELD ENGINEER AND CONTRACTOR WILL EXCAVATE TEST HOLES WITHIN AREA OUTLINED ON SHEET 1 TO DETERMINE WHERE ADEQUATE FILL SHALL BE TAKEN, ⊕ MIN. THE MATERIAL SHALL CONSIST OF A COHESIVE LEAN CLAY WITH CLOSE TO OPTIMUM MOISTURE. DESIGNATED BORROW AREA IS ALSO DESIGNATED WASTE AREA FOR INLET CHANNEL SPOIL MATERIAL. CONTRACTOR WILL MINE MATERIAL PRIOR TO DEPOSITING SPOIL. MATERIAL WILL BE PLACED AND COMPACTED AS DESCRIBED IN EMBANKMENT SPECIFICATION 204. FINISHED SLOPES SHALL BE 3:1 OR FLATTER. CONTRACTOR WILL BLEND BORROW AREA INTO THE EXISTING LANDSCAPE TO THE EXTENT POSSIBLE AND LEVEL SUITABLE ENOUGH FOR SEEDING & MULCHING. QUANTITY IS BASED ON THE NEW EMBANKMENT TEMPLATE OVER EXISTING GROUND PLUS SITE PREPARATION AND 15% FOR SHRINKAGE. THIS IS A PLAN QUANTITY, THERE WILL BE NO ADJUSTMENT MADE FOR INCREASE OR DECREASE TO QUANTITY.

PAYMENT FOR EMBANKMENT CONSTRUCTION: MATERIAL, HAULING, PLACING, COMPACTING, AND RECLAIMING BORROW AREA SHALL BE PAID FOR BASED ON THE CONTRACTOR'S UNIT BID PRICE FOR "EMBANKMENT."

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8-12-2013
Date

DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

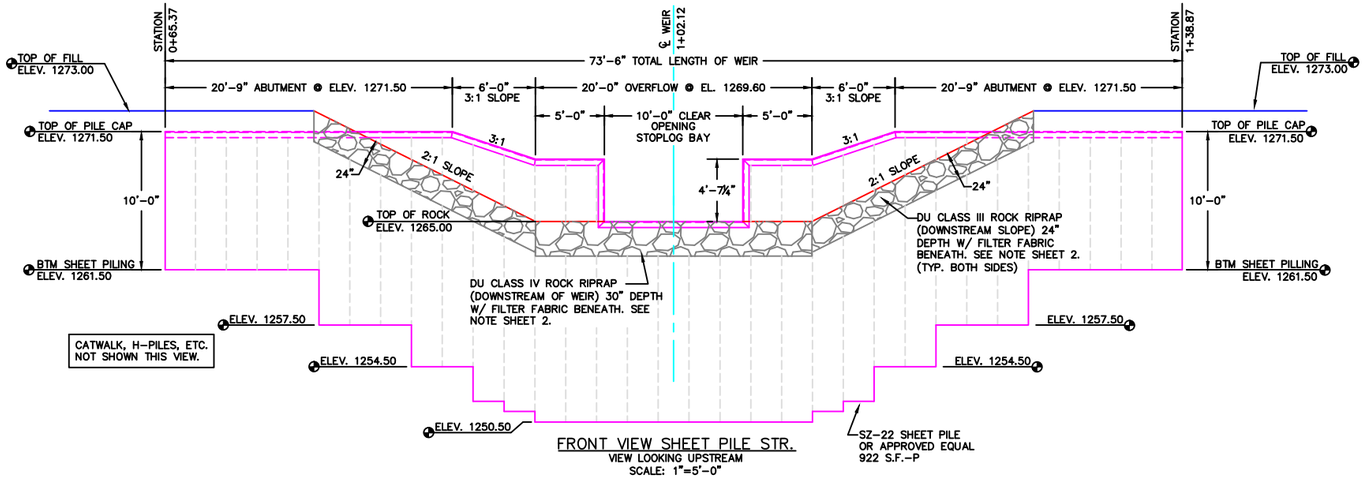
PROJECT NO. MN-428-2

STATE LINE LAKE
PLAN & PROFILE EMBANKMENT
DETAILS AND NOTES

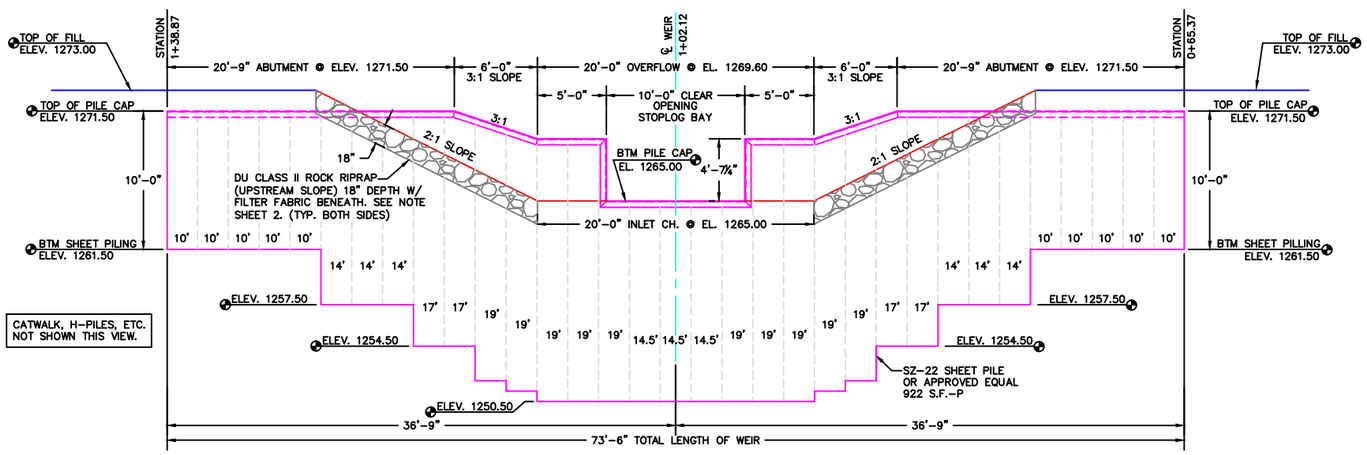
DESIGNED BY: JAS
DRAWN BY: MLO
SURVEYED BY: GLJ
CHECKED BY: .

DATE: 7-30-2013
SHEET NO. 6 OF 13
APPROVED BY: .
APPROVED BY: .

2012-00039-SEW, Figure 8 of 13: Project Plans for Dam Removal/Replacement



FRONT VIEW SHEET PILE STR.
VIEW LOOKING UPSTREAM
SCALE: 1"=5'-0"



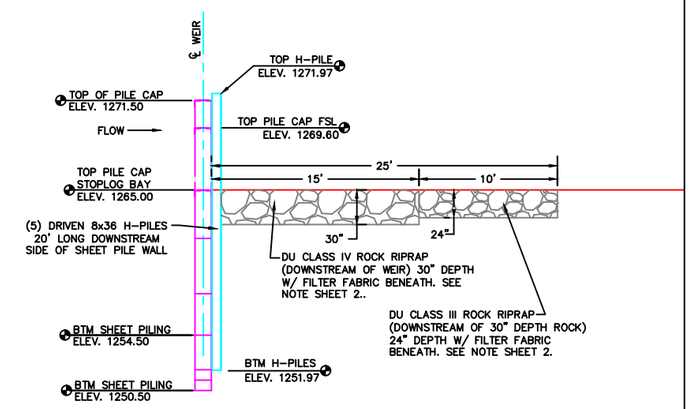
FRONT VIEW SHEET PILE STR.
VIEW LOOKING DOWNSTREAM
SCALE: 1"=5'-0"

SHEET PILE SPECIFICATIONS:

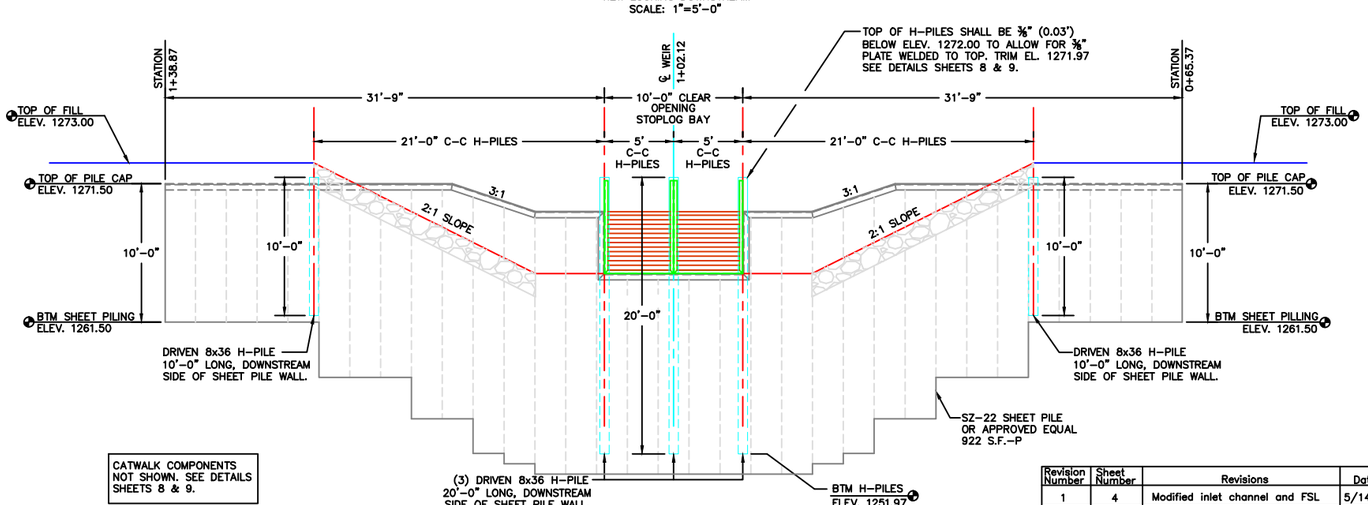
SZ-22 SHEET PILE OR APPROVED EQUAL
MINIMUM THICKNESS 0.375 INCHES
MINIMUM SECTION MODULUS 18.1 IN^3/LF OF WALL

QUANTITIES:
SHEET PILE: SZ-22 (26.75" WIDE)

10' LONG SHEETS	10 REQ'D
14' LONG SHEETS	6 REQ'D
14.5' LONG SHEETS	3 REQ'D
17' LONG SHEETS	4 REQ'D
19' LONG SHEETS	10 REQ'D
TOTAL SQUARE FOOT =	1082 S.F.-P



SIDE VIEW SHEET PILE STR.
SCALE: 1"=5'-0"



FRONT VIEW SHEET PILE STR.
VIEW LOOKING DOWNSTREAM
SCALE: 1"=5'-0"

NOTE TO CONTRACTOR:
TO GET TRIMMED ELEVATIONS SUBTRACT 0.06' (¾"±) FROM TOP OF CAP ELEVATIONS.

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

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James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8-12-2013
Date

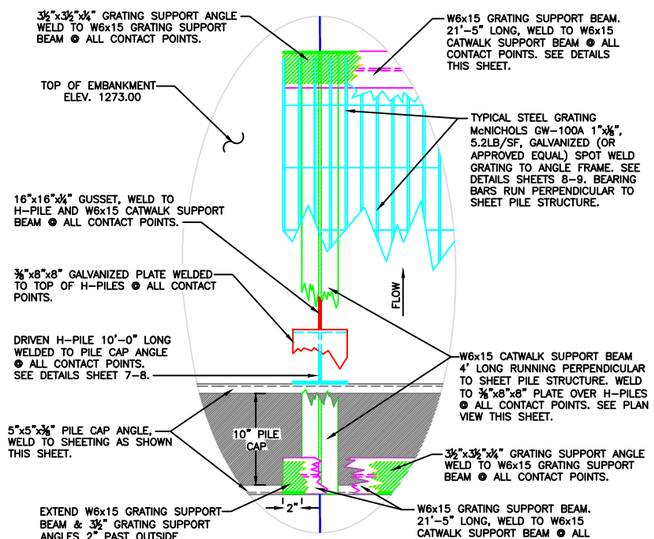
DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

PROJECT NO. MN-428-2
STATE LINE LAKE
SHEET PILE WATER CONTROL
STRUCTURE DETAILS AND NOTES

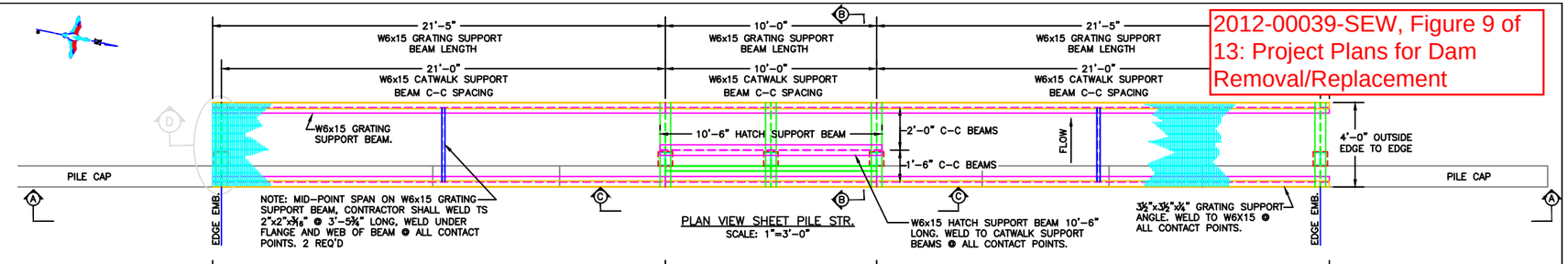
DATE: 7-30-2013
SHEET NO. 7 OF 13
APPROVED BY: .
APPROVED BY: .

DESIGNED BY: JAS
DRAWN BY: MLO
SURVEYED BY: GLJ
CHECKED BY: .

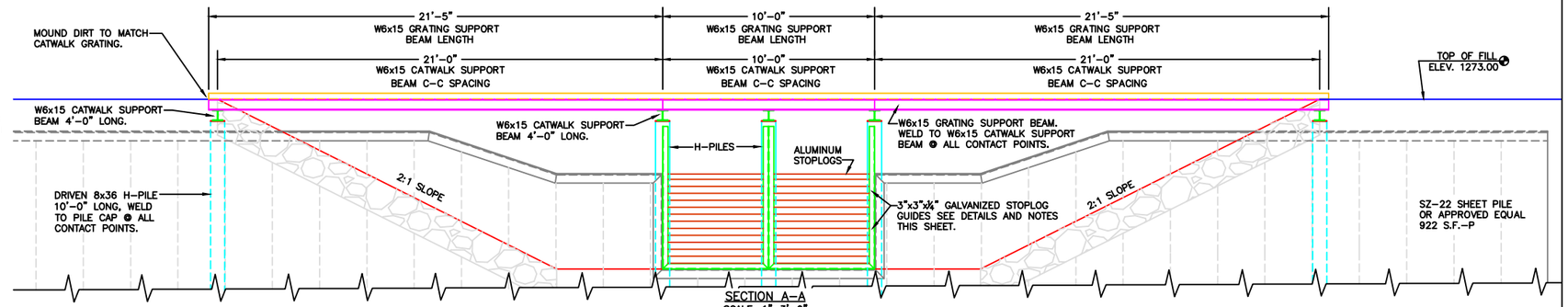
2012-00039-SEW, Figure 9 of 13: Project Plans for Dam Removal/Replacement



DETAIL "D"
NOT TO SCALE

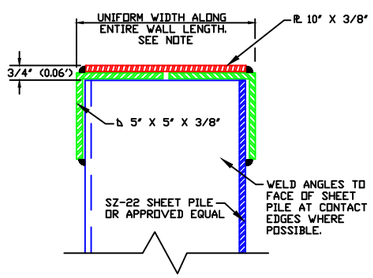


PLAN VIEW SHEET PILE STR.
SCALE: 1"=3'-0"



SECTION A-A
SCALE: 1"=3'-0"

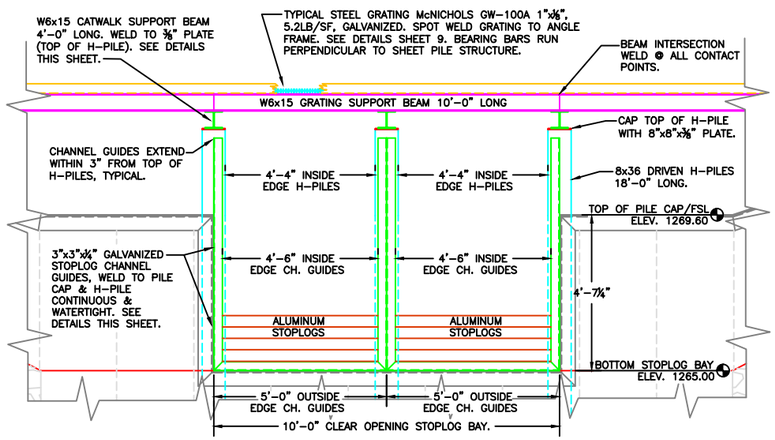
GALVANIZING NOTE:
ALL CATWALK COMPONENTS SHALL BE GALVANIZED. THIS INCLUDES: W6x15 CATWALK SUPPORT BEAMS, W6x15 GRATING SUPPORT BEAMS, W6x15 HATCH SUPPORT BEAM, 3½"x3½"x¼" GRATING SUPPORT ANGLES, 16"x16" GUSSET PLATES, ⅜"x8"x8" PLATE, ½"x6"x6" PLATE, TS 2"x2"x3/16" SUPPORT AND ANY OTHER ITEMS PERTAINING TO CATWALK. GRATING, 3"x3"x¼" STOPLOG GUIDES, AND LIFTING HOOKS SHALL ALSO BE GALVANIZED. ANY GALVANIZED COMPONENTS THAT ARE WELDED IN THE FIELD SHALL BE RE-PAINTED W/ A COLD GALVANIZING PAINT TO MATCH. THE COST OF GALVANIZING IS CONSIDERED INCIDENTAL TO "STRUCTURAL STEEL."



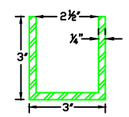
NOTE: CAP WIDTH VARIES DEPENDING ON ALIGNMENT OF SHEET PILE WALL; HOWEVER, ONCE THE APPROPRIATE WIDTH IS DETERMINED, IT SHALL REMAIN UNIFORM ALONG ENTIRE LENGTH OF WALL.

PILE CAP SECTION VIEW
NOT TO SCALE

NOTE: ALL WELDS AT OR BELOW FSL ELEV. 1269.6 SHALL BE CONTINUOUS, WATERTIGHT AND SUBJECT TO LAMPING TO ENSURE WATERTIGHT SEAL.

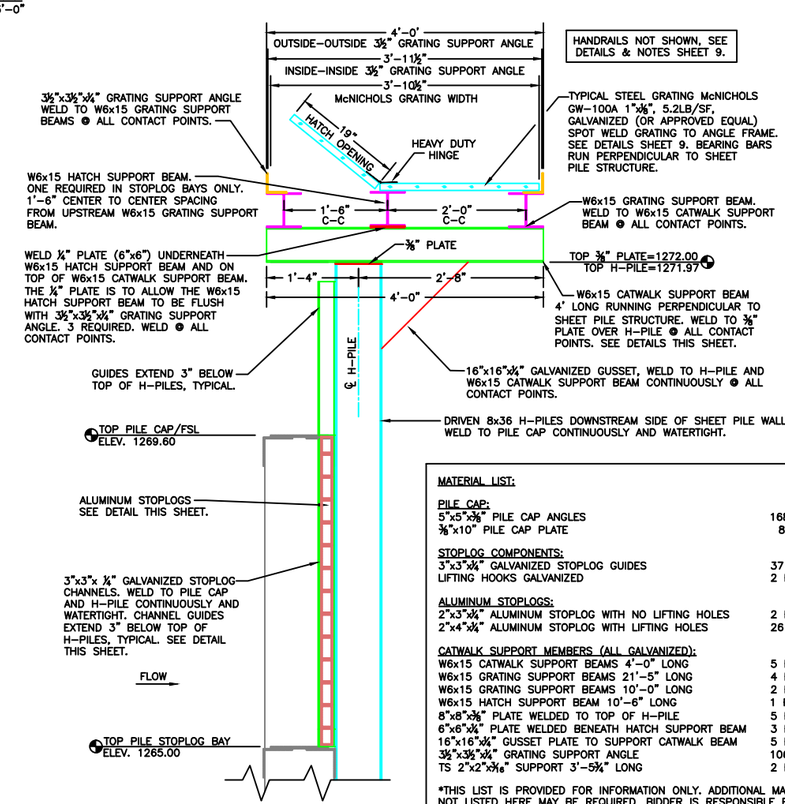


SECTION C-C
SCALE: 1"=2'-0"



STOPLOG CHANNEL DETAIL
NOT TO SCALE

SUPPLIER MAY SPLIT TS 6"x 3"x 1/4" TO FORM CHANNEL. CHANNELS SHALL BE GALVANIZED.

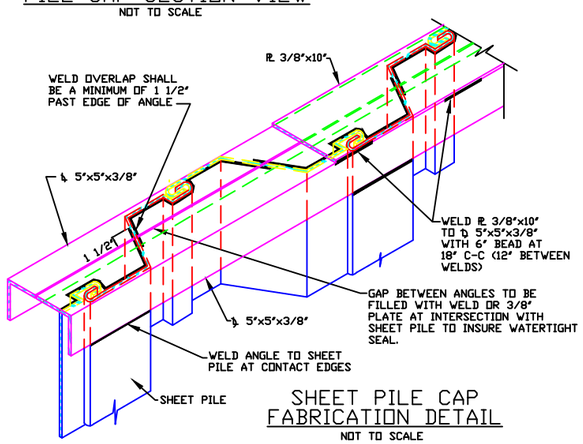


SECTION B-B
SCALE: 1"=1'-0"

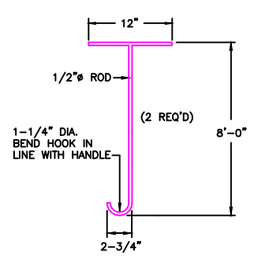
MATERIAL LIST:

PILE CAP:	
5"x5"x⅜" PILE CAP ANGLES	168 L.F.
⅜"x10" PILE CAP PLATE	84 L.F.
STOPLOG COMPONENTS:	
3"x3"x¼" GALVANIZED STOPLOG GUIDES	37 L.F.
LIFTING HOOKS GALVANIZED	2 REQ'D
ALUMINUM STOPLOGS:	
2"x3"x¼" ALUMINUM STOPLOG WITH NO LIFTING HOLES	2 REQ'D
2"x4"x¼" ALUMINUM STOPLOG WITH LIFTING HOLES	26 REQ'D
CATWALK SUPPORT MEMBERS (ALL GALVANIZED):	
W6x15 CATWALK SUPPORT BEAMS 4'-0" LONG	5 REQ'D
W6x15 GRATING SUPPORT BEAMS 21'-5" LONG	4 REQ'D
W6x15 GRATING SUPPORT BEAMS 10'-0" LONG	2 REQ'D
W6x15 HATCH SUPPORT BEAM 10'-6" LONG	1 REQ'D
8"x8"x⅜" PLATE WELDED TO TOP OF H-PILE	5 REQ'D
6"x6"¼" PLATE WELDED BENEATH HATCH SUPPORT BEAM	3 REQ'D
16"x16"¼" GUSSET PLATE TO SUPPORT CATWALK BEAM	5 REQ'D
3½"x3½"x¼" GRATING SUPPORT ANGLE	106 L.F.
TS 2"x2"x3/16" SUPPORT 3'-5¾" LONG	2 REQ'D

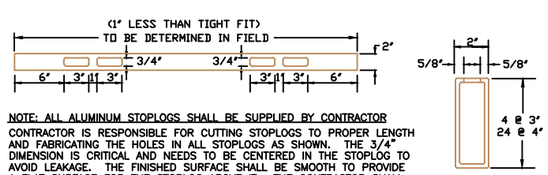
*THIS LIST IS PROVIDED FOR INFORMATION ONLY. ADDITIONAL MATERIALS NOT LISTED HERE MAY BE REQUIRED. BIDDER IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES. ALSO, ADDITIONAL LENGTH OF STEEL STOCK BEYOND WHAT'S LISTED HERE MAY BE REQUIRED TO ALLOW FOR FABRICATION.



SHEET PILE CAP FABRICATION DETAIL
NOT TO SCALE



STOPLOG LIFTING HOOK DETAIL
NOT TO SCALE



NOTE: ALL ALUMINUM STOPLOGS SHALL BE SUPPLIED BY CONTRACTOR

CONTRACTOR IS RESPONSIBLE FOR CUTTING STOPLOGS TO PROPER LENGTH AND FABRICATING THE HOLES IN ALL STOPLOGS AS SHOWN. THE 3/4" DIMENSION IS CRITICAL AND NEEDS TO BE CENTERED IN THE STOPLOG TO AVOID LEAKAGE. THE FINISHED SURFACE SHALL BE SMOOTH TO PROVIDE A FLAT SURFACE FOR THE STOPLOG ABOVE IT. THE CONTRACTOR SHALL DELIVER ALL STOPLOGS TO THE SITE. THE COST OF THE STOPLOG WORK SHALL BE PAID FOR BASED ON CONTRACTOR'S UNIT BID PRICE FOR "ALUMINUM STOPLOGS."

ALUMINUM STOPLOG DETAIL
NOT TO SCALE

NOTES:
1. ALL WELDS TO BE 1/4" FILLET WELDS (SEE D.U. SPECIFICATIONS).
2. ALL WELDS WILL BE SUBJECT TO LAMPING. ANY AREAS FAILING WILL BE REWELDED BEFORE ACCEPTANCE OF PROJECT.
3. TOP OF SHEET PILE SHALL BE TRIMMED TO GRADES INDICATED ON PLANS TO REMOVE ANY DAMAGE CAUSED BY DRIVING. ANY TRIMMING OVER 3" SHALL BE CONSIDERED CUT-OFF AND WILL BE DEDUCTED FROM THE COST OF "SHEET PILE INSTALLATION."
4. ABOVE F.S.L. PILE CAP NEED NOT BE WATERTIGHT, WELDS SHALL CONSIST OF A 6" BEAD AT 18" C-C (12" BETWEEN WELDS).
5. LENGTH OF PILE CAP AS SHOWN ON PLANS.
6. ALL WELDS AROUND STOPLOG BAY TO BE CONTINUOUS TO INSURE A WATERTIGHT SEAL.

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

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James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8-12-2013
Date

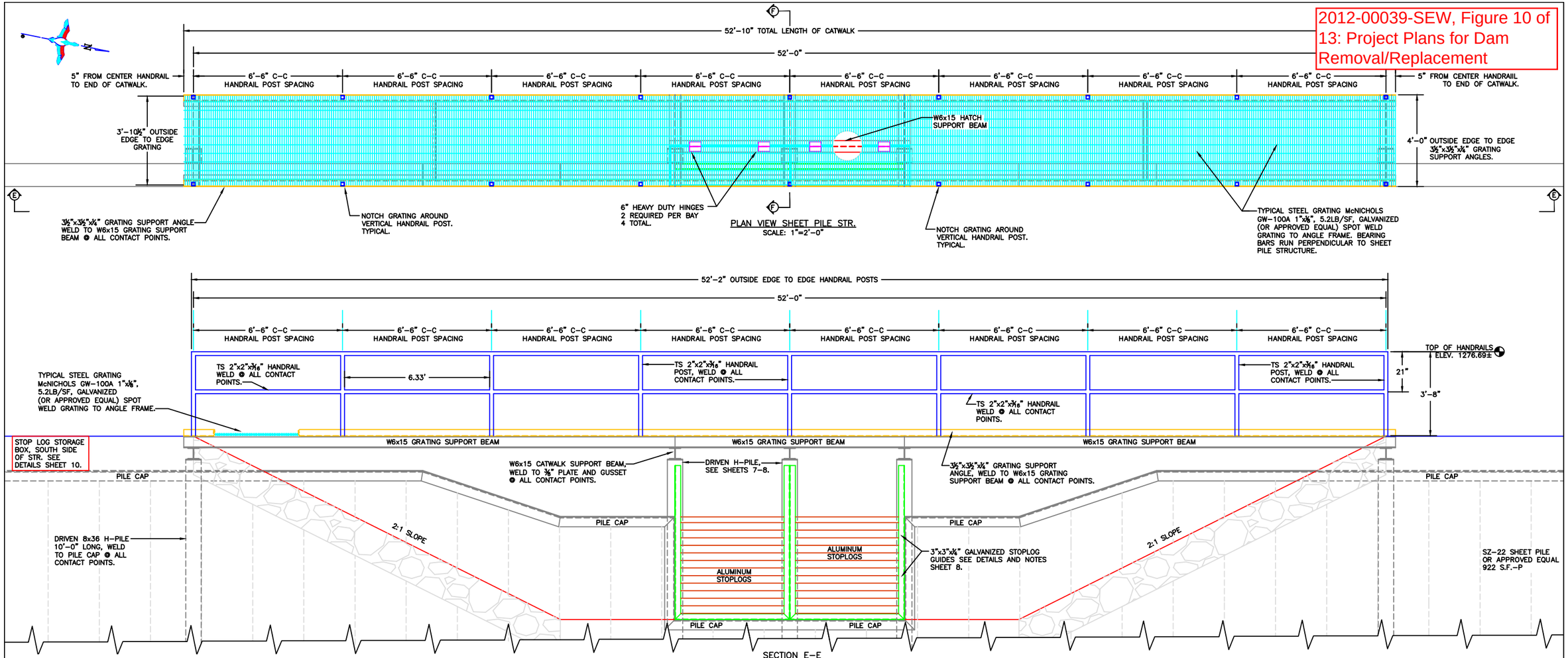
DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

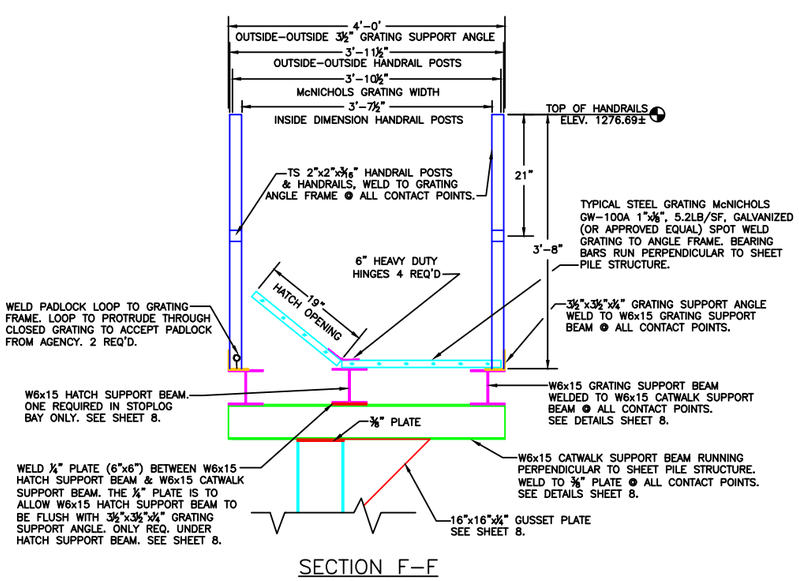
PROJECT NO. MN-428-2
STATE LINE LAKE
SHEET PILE WATER CONTROL STRUCTURE DETAILS AND NOTES

DESIGNED BY: JAS
DRAWN BY: MLO
SURVEYED BY: GLJ
CHECKED BY: .

DATE: 7-30-2013
SHEET NO. 8 OF 13
APPROVED BY: .
APPROVED BY: .

2012-00039-SEW, Figure 10 of 13: Project Plans for Dam Removal/Replacement





GALVANIZING NOTE:
ALL CATWALK COMPONENTS SHALL BE GALVANIZED. THIS INCLUDES: TS 2"x2"x3/16" HANDRAIL/POSTS, HEAVY DUTY HINGES, LOCKING LOOP, AND ANY OTHER ITEMS INCLUDED WITH CATWALK. ANY GALVANIZED COMPONENTS THAT ARE WELDED IN THE FIELD SHALL BE RE-PAINTED W/ A COLD GALVANIZING PAINT TO MATCH. THE COST OF GALVANIZING IS CONSIDERED INCIDENTAL TO "STRUCTURAL STEEL."

MATERIAL LIST:

CATWALK COMPONENTS: (ALL GALVANIZED)

McNICHOLS GALVANIZED BAR GRATING	206 S.F.
TS 2"x2"x3/16" HANDRAIL POSTS 3'-8" LONG	18 REQ'D
TS 2"x2"x3/16" HANDRAIL	203 L.F.
6" HEAVY DUTY HINGES	4 REQ'D
LOCKING LOOP	2 REQ'D

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Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

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James A. Streifel
James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8-12-2013
Date

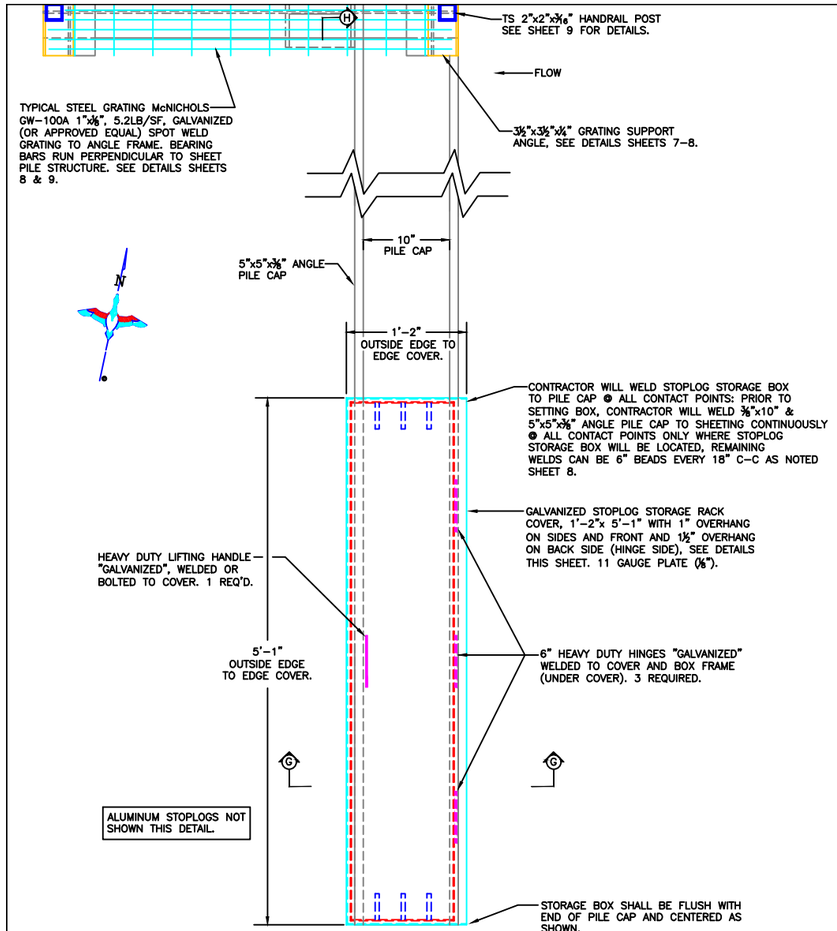
DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

PROJECT NO. MN-428-2
STATE LINE LAKE
SHEET PILE WATER CONTROL
STRUCTURE DETAILS AND NOTES

DESIGNED BY: JAS
DRAWN BY: MLO
SURVEYED BY: GLJ
CHECKED BY: .

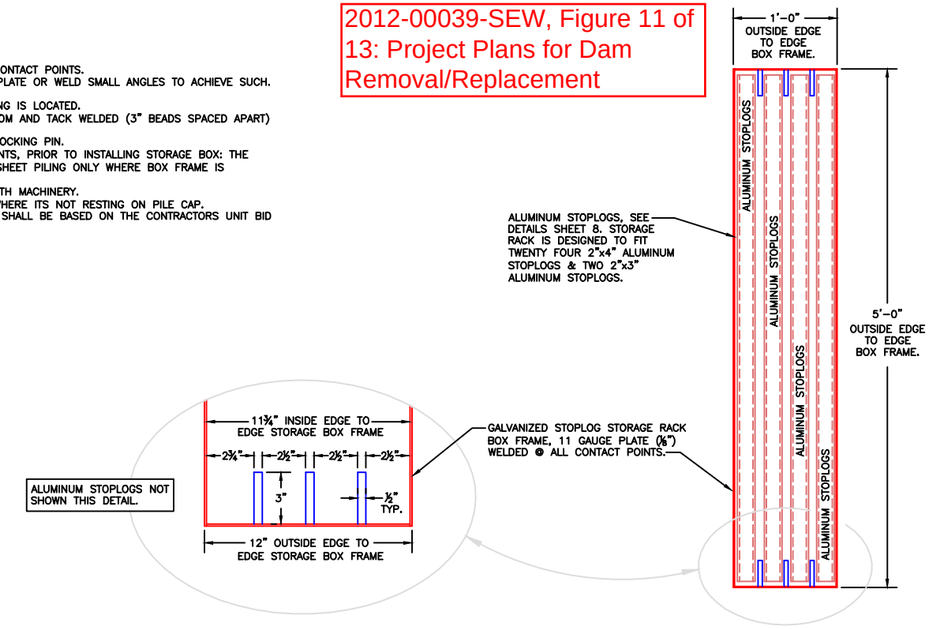
DATE: 7-30-2013
SHEET NO. 9 OF 13
APPROVED BY: .
APPROVED BY: .

2012-00039-SEW, Figure 11 of 13: Project Plans for Dam Removal/Replacement

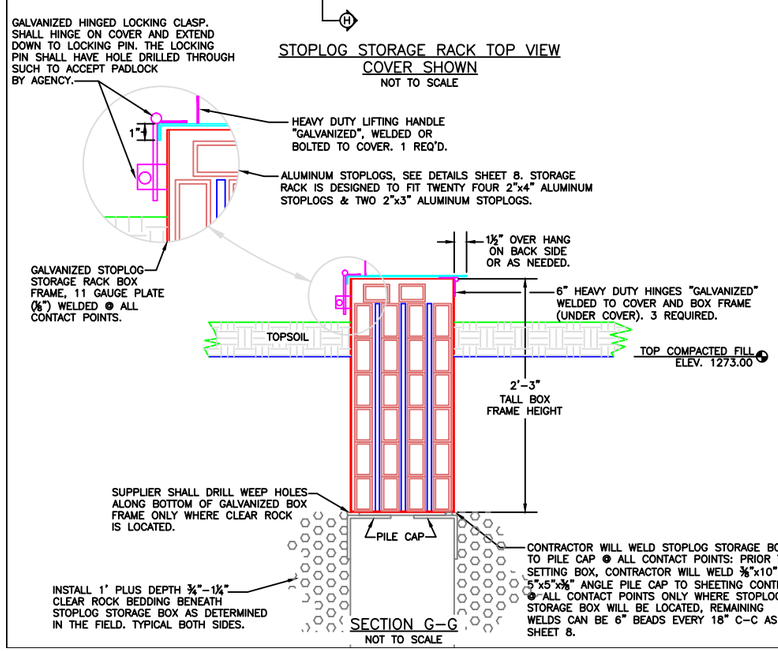


STOPLOG STORAGE RACK TOP VIEW
COVER SHOWN
NOT TO SCALE

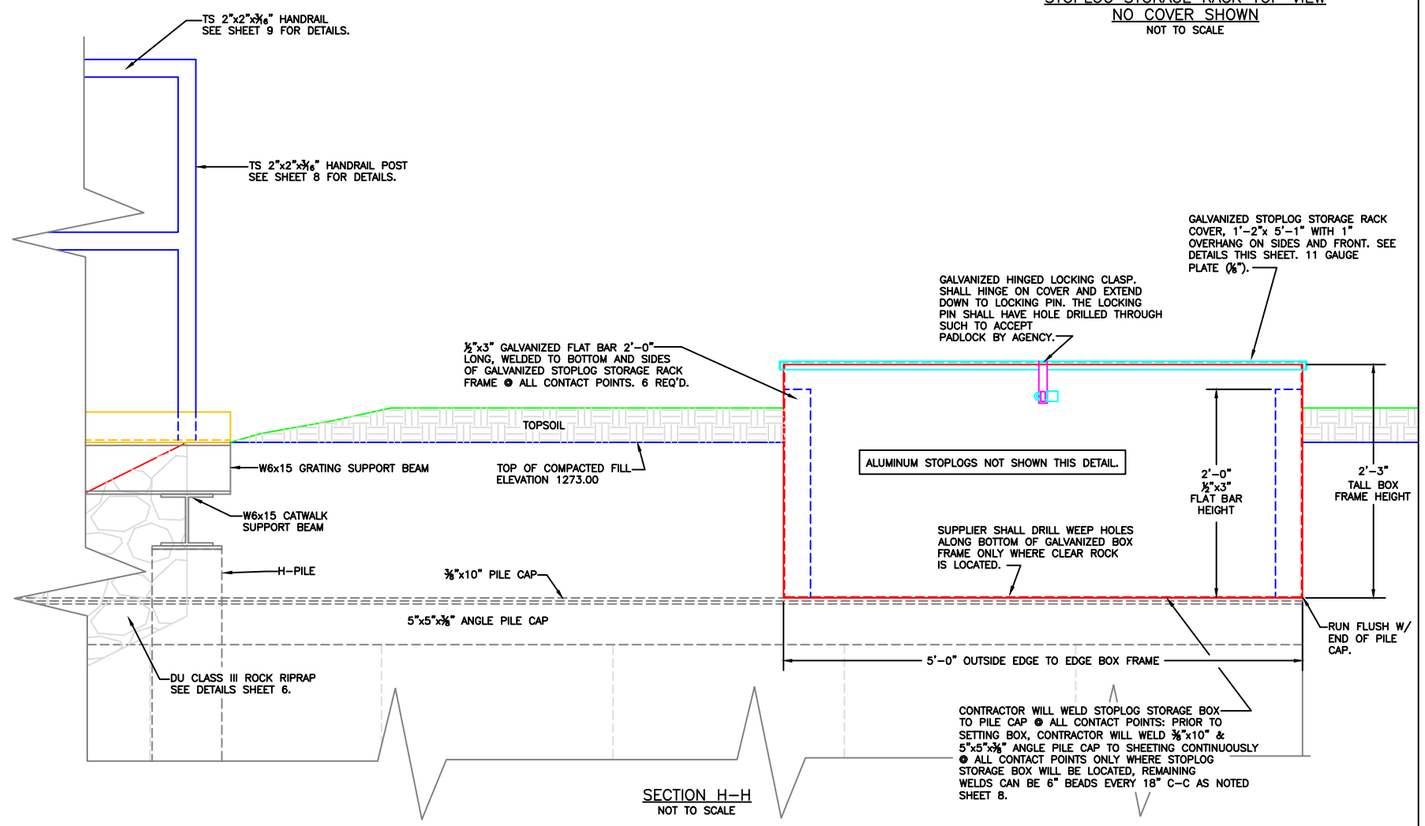
STOPLOG STORAGE BOX NOTES:
-BOX FRAME AND COVER SHALL BE 11 GAUGE (1/8" THICK) AND BE WELDED @ ALL CONTACT POINTS.
-COVER SHALL HAVE A 1" OVER HANG ON SIDES AND FRONT, SUPPLIER CAN BEND PLATE OR WELD SMALL ANGLES TO ACHIEVE SUCH.
-ALL STOPLOG STORAGE BOX COMPONENTS SHALL BE GALVANIZED.
-SUPPLIER SHALL DRILL WEEP HOLES IN BOTTOM OF BOX ONLY WHERE ROCK BEDDING IS LOCATED.
-½"x3" FLAT BARS SPACERS SHALL BE WELDED @ ALL CONTACT POINTS ALONG BOTTOM AND TACK WELDED (3" BEADS SPACED APART) ALONG BOTH SIDES OF BAR STOCK SUFFICIENT ENOUGH TO WITH STAND FIELD USE.
-SUPPLIER SHALL USE HEAVY DUTY HINGES, LIFTING HANDLE, LOCKING CLASP. AND LOCKING PIN.
-STOPLOG STORAGE BOX WILL BE WELDED TO 3/8"x10" PILE CAP @ ALL CONTACT POINTS, PRIOR TO INSTALLING STORAGE BOX: THE CONTRACTOR SHALL WELD 3/8"x10" PILE CAP & 5"x5"x3/8" ANGLES CONTINUOUSLY TO SHEET PILING ONLY WHERE BOX FRAME IS LOCATED. REMAINING WELDS CAN BE 6" BEADS, 18" C-C AS NOTED SHEET 8.
-LIFTING HOOKS MAY NEED TO BE PROVED SO CONTRACTOR CAN HOIST IN-PLACE WITH MACHINERY.
-CONTRACTOR WILL INSTALL 1' PLUS ¾"-1¼" CLEAR ROCK BENEATH STORAGE BOX WHERE ITS NOT RESTING ON PILE CAP.
-PAYMENT FOR STOPLOG STORAGE BOX AND ALL COMPONENTS DETAILED THIS SHEET SHALL BE BASED ON THE CONTRACTORS UNIT BID PRICE FOR "GALVANIZED STOPLOG STORAGE BOX."



STOPLOG STORAGE RACK TOP VIEW
NO COVER SHOWN
NOT TO SCALE



SECTION G-G
NOT TO SCALE



SECTION H-H
NOT TO SCALE

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8-12-2013
Date

DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

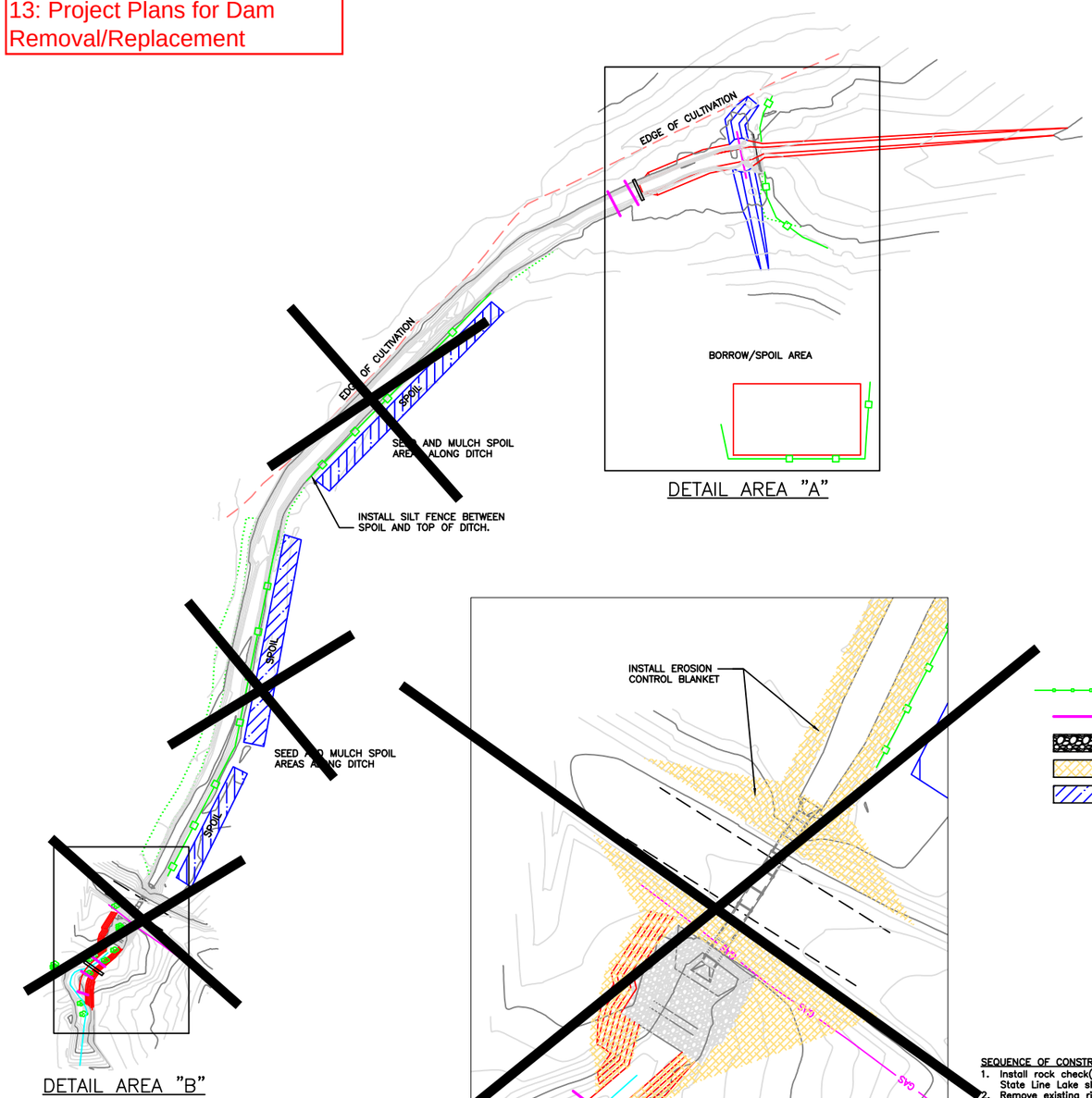
PROJECT NO. MN-428-2

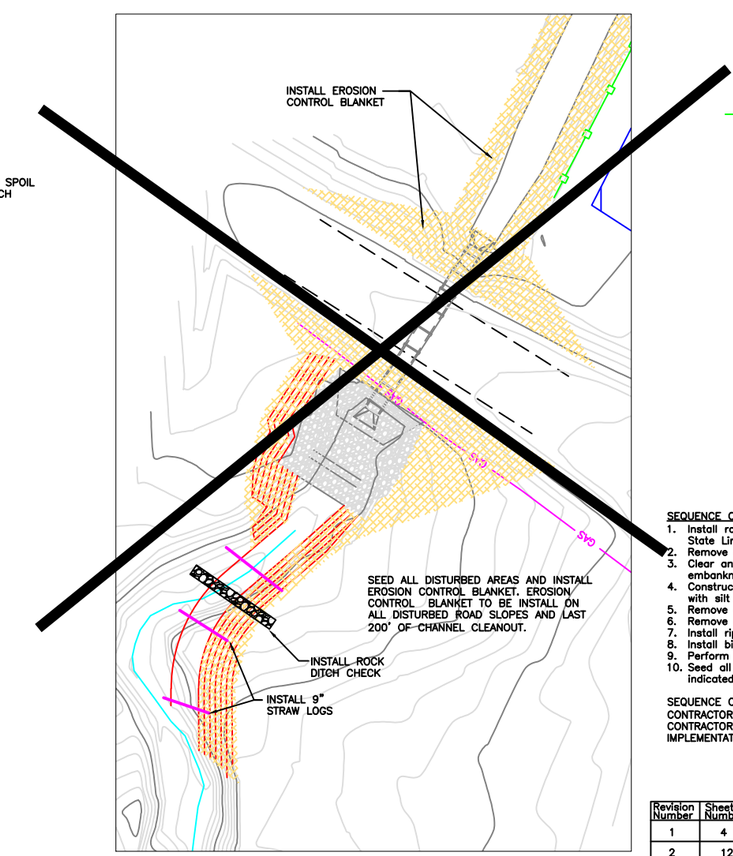
STATE LINE LAKE
SHEET PILE WATER CONTROL
STRUCTURE DETAILS AND NOTES

DESIGNED BY: JAS
DRAWN BY: MLO
SURVEYED BY: GLJ
CHECKED BY: .

DATE: 7-30-2013
SHEET NO. 10 OF 13
APPROVED BY: .
APPROVED BY: .

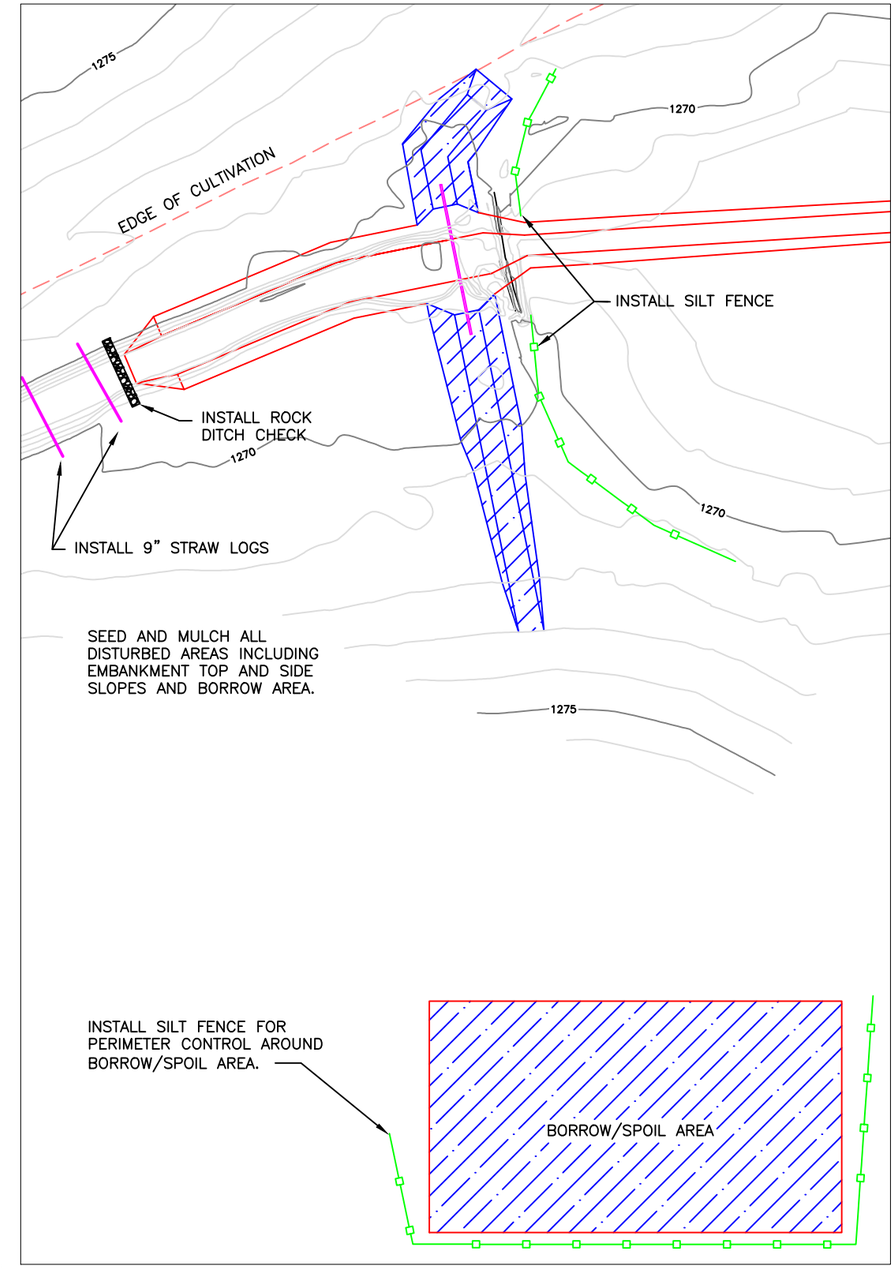
2012-00039-SEW, Figure 12 of 13: Project Plans for Dam Removal/Replacement





LEGEND

- SILT FENCE
- BIOROLLS
- TEMPORARY ROCK CHECK
- EROSION CONTROL BLANKET
- SEEDING & MULCHING



SEQUENCE OF CONSTRUCTION ACTIVITIES AND BMP IMPLEMENTATION

1. Install rock check(s) and silt fence adjacent to channel and State Line Lake shoreline at structure replacement site.
2. Remove existing riprap and install new sheet pile wier.
3. Clear and grub structure site and strip topsoil from embankment and borrow area sites.
4. Construct embankment, install riprap and stabilize adjacent area with silt fence.
5. Remove existing State Line Lake structure.
6. Remove and replace County Highway culvert.
7. Install riprap basin.
8. Install biorolls and remove rock check structures.
9. Perform channel cleanout and install adjacent silt fence.
10. Seed all disturbed areas and install erosion control blanket as indicated.

SEQUENCE OF CONSTRUCTION EVENTS MAY BE ALTERED BY THE CONTRACTOR AS LONG AS BMP'S ARE IMPLEMENTED ACCORDINGLY. CONTRACTOR SHALL PROVIDE MODIFIED SCHEDULE AND BMP IMPLEMENTATION.

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
3	1,3	Revised Borrow Area	7/30/13	JS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8-12-2013
Date

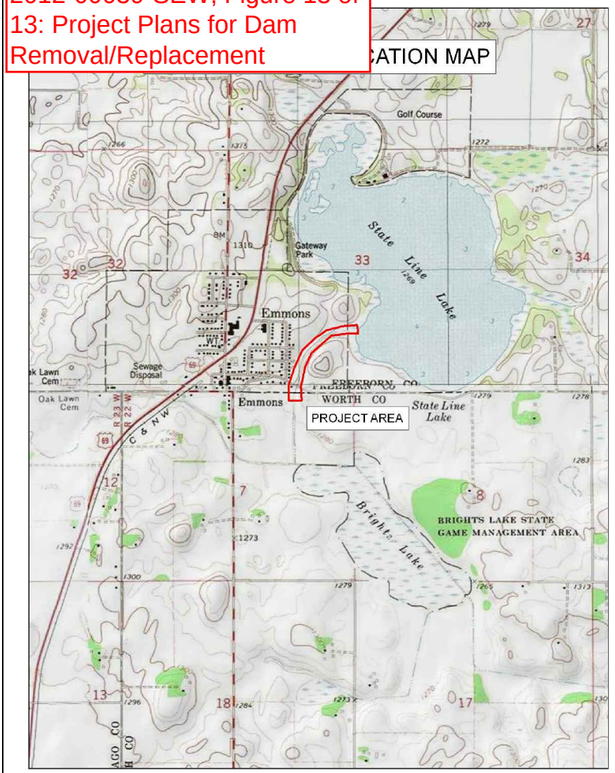
DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

PROJECT NO. MN-428-2
STATE LINE LAKE
STORMWATER BMP's

DESIGNED BY: JS
DRAWN BY: JS
SURVEYED BY: GLJ
CHECKED BY: .

DATE: 7-30-2013
SHEET NO. 12 OF 13
APPROVED BY: .
APPROVED BY: .

2012-00039-SEW, Figure 13 of 13: Project Plans for Dam Removal/Replacement



STORM WATER POLLUTION PREVENTION PLAN

THE Minnesota General Permit Authorization to Discharge Stormwater Associated with Construction Activity issued on August 1, 2008 shall apply for this project.

ABBREVIATIONS

MNDNR: Minnesota Department of Natural Resources
FWS: United States Fish & Wildlife Service
MPCA: Minnesota Pollution Control Agency

NARRATIVE

Project Limits: See Sheets 3, 4 & 10 of these plans for the project limits. These sheets cover structure and pipeline installations, channel excavation, and seeding areas.

SITE DESCRIPTION

Project Description: The purpose of the project is to replace the State Line Lake outlet structure with a sheet pile weir for the purposes of variable level water management. Work includes embankment construction, channel clean out and downstream culvert replacement.

Site Map(s): See map this sheet.

Major Soil Disturbing Activities (check all that apply):

- X Clearing & Grubbing
- X Grading & Shaping
- X Cutting & Filling
- ___ Other (describe):

Total Project Area: 3.5 Acres
Total Area to Be Disturbed: 3.5 Acres
Existing Impervious Area: 0.06 Acres
Proposed Impervious Area: 0.06 Acres

Name of Receiving Water Body/Bodies: Lime Creek.

Discharges to Special Or Impaired Waters: The project does not have a discharge point within 1 mile of a special water or a water that is impaired for sediment or a sediment related parameter of the permit.

Discharges to Calcareous Fen: The project does not have a discharge to a Calcareous fen.

Endangered or Threatened Species: The project area has not been identified for endangered or threatened species.

Historic Places or Archeological Sites: Historical places or archeological sites have been addressed by the MnDNR.

Quantities Tabulation for All BMPs: See estimated quantities and construction notes in plans.

MAINTENANCE AND INSPECTION

Maintenance and Inspection Practices

- Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report or as soon as field conditions allow access.
- Where work has been suspended due to frozen ground conditions, the required inspections and maintenance must take place as soon as runoff occurs at the site or prior to resuming construction, whichever comes first.
- Where parts of the construction site have undergone final stabilization, but work remains on other parts of the site, inspections of the stabilized areas may be reduced to once per month.
- Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely anchored. Sediment buildup will be removed from the silt fence when it reaches ½ of the height of the silt fence. All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches ½ of the height of the fence.
- Sediment basins and traps will be checked. Sediment will be removed when the depth reaches approximately 50 percent of the structure's capacity.
- Check dams will be inspected for stability. Sediment will be removed when the depth reaches ½ the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of sediment being deposited by erosion.
- Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all off-site paved surfaces within 24 hours of discovery.
- Disturbed areas will be checked for stabilization. Stabilization measures shall be initiated as soon as construction activity in that portion of the site has temporarily or permanently ceased.
- The normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge into any surface water. Stabilization of the last 200 lineal feet must be completed within 24 hours after connection to a surface water.
- Stabilization of the remaining portions of any temporary or permanent ditches or swales must be completed within 14 days after connecting to a surface water and construction in that portion of the ditch has temporarily or permanently ceased.
- Temporary or permanent ditches or swales that are being used as a sediment containment system (with properly designed rock ditch checks, bio rolls, silt dikes, etc.) do not need to be stabilized. These areas must be stabilized within 24 hours after no longer being used as a sediment containment system.
- Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours after connection to a surface water.
- Discharge procedures for water control and dewatering operations will be inspected. If the water cannot be discharged to a sedimentation basin prior to entering the surface water, it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream landowners.
- Inspection and maintenance reports will be completed for each site inspection, this form will also be used to document changes to the SWPPP. The report shall include the date and amount of rainfall events greater than 0.5 inch in 24 hours. A copy of the completed inspection form will be filed with the SWPPP documents.
- The Contractor's site superintendent is responsible for inspection. Maintenance and repair activities are the responsibility of the Contractor.

Pollution Prevention Management Measures

- Solid Wastes – Collected sediment, asphalt, and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with the MPCA disposal requirements.
- Hazardous Materials – Oil, gasoline, paint and any hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MPCA regulations.
- Vehicle Washing – External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.
- Concrete Washout Onsite – All liquid and solid wastes generated by concrete washout operation must be contained in a leak-proof containment facility or impermeable liner. A compacted clay liner that does not allow washout liquids to enter ground water is considered an impermeable liner. The liquid and solid wastes must not contact the ground, and there must not be runoff from the concrete washout operation or areas. Liquid and solid wastes must be disposed of properly and in compliance with MPCA regulations. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.

ORDER OF CONSTRUCTION ACTIVITIES

(Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.)

- Install erosion and sediment control measures.
- Proceed with site grading and construction activities.
- Stabilize areas disturbed by construction activities with temporary erosion and sediment control measures.
- Complete final grading.
- Complete permanent erosion and sediment control measures.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

See sheets 2, 12 & 13 for erosion control measures and notes.

EROSION AND SEDIMENT CONTROLS

(Check all that apply)

Stabilization Practices (See Erosion and Sediment Control Details in Plan Sheets)

- X Temporary or Permanent Seeding
- ___ Sod Placement
- ___ Planting
- X Mulching (Straw or Cellulose Fiber)
- X Erosion Control Blankets or Mats
- ___ Vegetation Buffer Strips
- X Roughened Surface (e.g. tracking)
- ___ Gabions-Gabion Mattress
- X Other: Rip Rap

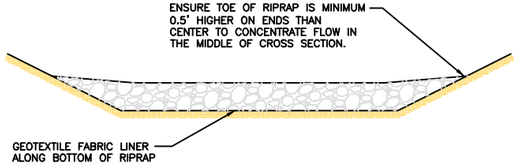
Structural Temporary Erosion and Sediment Controls

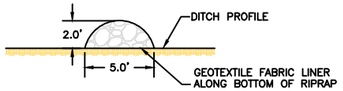
- X Silt Fence
- X Temporary Berm
- ___ Temporary Slope Drain
- X Straw Wattles or Rolls
- ___ Diversion Channels/Swales
- ___ Channel Liners (TRM)
- X Stone Rip Rap Sheet
- ___ Rock Check Dams
- ___ Sediment Traps/Basins
- ___ Inlet Protection
- X Outlet Protection
- ___ Surface Inlet Protection
- ___ Curb Inlet Protection
- ___ Stabilized Construction Entrances
- ___ Other

Wetland Avoidance:

Will construction and/or erosion and sediment controls impinge on regulated wetlands? X Yes ___ No
If yes, the project and erosion and sediment control impacts have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

Storm Water Management: Storm water management will be handled by temporary controls outlined in "EROSION AND SEDIMENT CONTROLS" above, and any permanent controls needed to meet permanent storm water management needs in the post construction period.

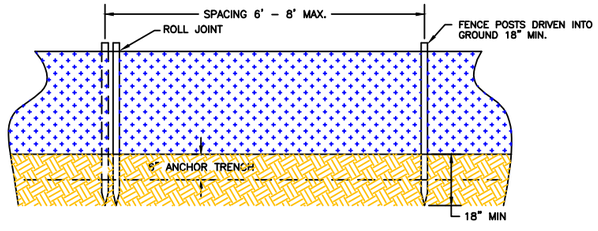


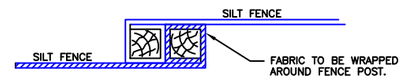


TYPICAL ROCK CHECK

NRCS Soil Survey for Freeborn County, Minnesota (MN047)

NRCS Soils Description (Surface)	Unified Soil Classification (Surface)	Acres in AOI	Percent of AOI
Webster Clay Loam	CL	1.4	40%
Lester Loam, 2 to 6 percent slopes	CL	1.3	37%
Aquents and Histosols, ponded	CL	0.56	16%
Glencoe Clay Loam	ML	0.24	7%
Totals for Area of Interest		3.5	100%

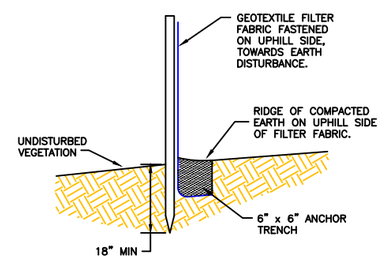




ROLL JOINTS

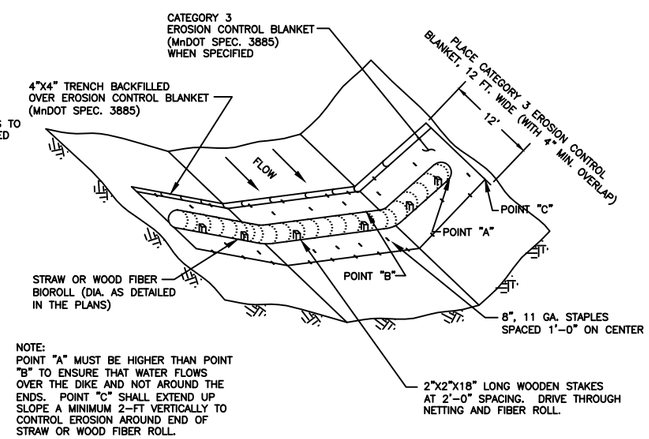
SILT FENCE NOTES:
WOOD POST SHALL BE A MINIMUM OF 1½" x 1½".

CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IS POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE THE DETAIL SHOWN OR OTHER APPROVED METHOD.



SILT FENCE DETAIL

NOT TO SCALE



NOTE:
POINT "A" MUST BE HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS. POINT "C" SHALL EXTEND UP SLOPE A MINIMUM 2-FT VERTICALLY TO CONTROL EROSION AROUND END OF STRAW OR WOOD FIBER ROLL.

TEMPORARY DTICH CHECK DETAIL

NOT TO SCALE

PROJECT CONTACTS AND RESPONSIBILITIES

The Contractor is responsible for cosigning and being familiar with the MPCA General Permit for storm water discharges associated with a construction site. When a conflict arises between the permit and this plan sheet, the permit shall govern.

The Contractor is responsible for implementation of the SWPPP and installation, inspection and maintenance of the erosion prevention and sediment control BMP's before and during construction. The Minnesota Department of Natural Resources, Windom Field Office, is responsible for long term operation and maintenance of the permanent storm water management system. The Contractor and MNDNR contact information is provided in the contract documents and project plans.

James A. Streifel, P.E., Regional Engineer for Ducks Unlimited, Inc. prepared the SWPPP. He successfully completed the "Design of Storm Water Pollution Prevention Plans" training course sponsored by the University of Minnesota (Nov. 16-17, 2009, Mankato, MN) and recertification course (Feb. 4, 2013, St. Cloud, MN). His certification expires May 31, 2016.

The Contractor will be required to have a person designated and on the project site who has been trained and certified as either an Erosion/ Sediment Control Inspector/Installer or in Erosion/Sediment Control Site Management.

SPILL NOTIFICATION

In the event of a spill, the contractor's site superintendent will make the appropriate notificiaton(s), consistent with the following procedures:

1. A reportable spill is a quantity of more than 5 gallons of petroleum which must be reported immediately to the MPCA.
2. Any spill of oil or hazardous substance to waters of the state must be reported immediately by telephone to the MPCA.
3. MPCA Contact for Environmental Emergencies: 24 Hour (651) 649-5451 or (800) 422-0798

CONSTRUCTION CHANGES

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SWPPP will be retained in a designated place for review over the course of the project.

Revision Number	Sheet Number	Revisions	Date	By
1	4	Modified inlet channel and FSL	5/14/13	JS
2	12	Added Stormwater BMP Sheet	5/14/13	JS
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James A. Streifel, P.E.
for Ducks Unlimited, Inc.
License No. 47359

8-12-2013
Date

DUCKS UNLIMITED INC.
GREAT PLAINS REGIONAL OFFICE

PROJECT NO. MN-428-2
STATE LINE LAKE
STORM WATER POLLUTION PREVENTION PLAN

DESIGNED BY: JAS
DRAWN BY: JAS
SURVEYED BY: GLJ
CHECKED BY:

DATE: 7-30-2013
SHEET NO. 13 OF 13
APPROVED BY: .
APPROVED BY: .